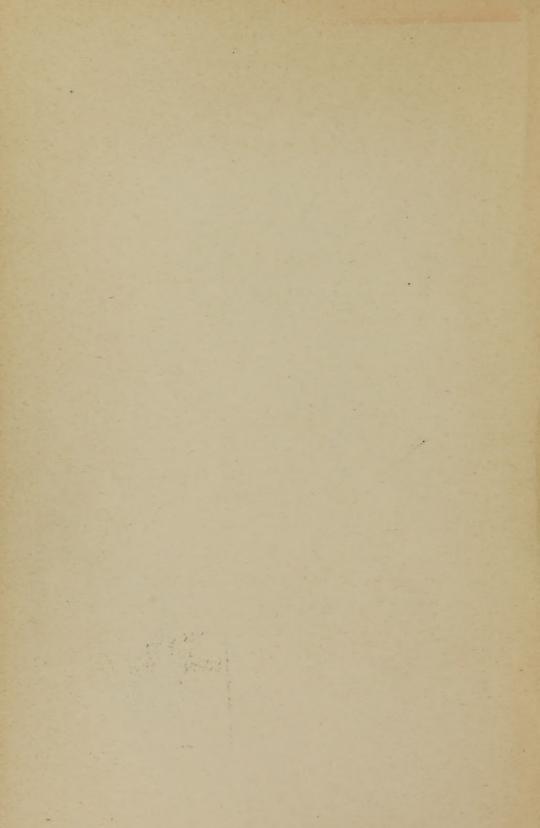


# THE COMPOSITE MAN

B. H. PRATT, A. M., M. D., LL D.



## SECOND EDITION.

# THE COMPOSITE MAN

AS COMPREHENDED IN

# FOURTEEN ANATOMICAL IMPERSONATIONS

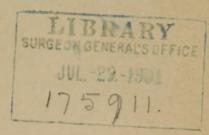
BY

# E. H. PRATT, A.M., M.D., LL.D.

Professor of Orificial Surgery in The Chicago Homeopathic Medical College; Attending Surgeon to the Cook County Hospital; Member the American Institute of Homeopathy, the Illinois State Homeopathic Association; Honorary Member of the Kentucky, Ohio, Missouri, Michigan, Wisconsin, Nebraska and Minnesota State Homeopathic Institutes, and Editor of "The Journal of Orificial Surgery."

Illustrations by Dr. Frederick H. Williams

CHICAGO, ILL.



QS 9 P913c 1901a

Film No. 5862, 200. 2 COPYRIGHT, 1901, BY E. H. PRATT, M.D.

### CONTENTS.

THE BONY MAN.

THE MUSCULAR MAN.

THE ARTERIAL MAN.

THE VENOUS MAN.

THE LYMPHATIC MAN.

THE SKIN MAN.

THE CONNECTIVE TISSUE MAN.

THE CEREBRO-SPINAL MAN.

THE TUBULAR MAN.

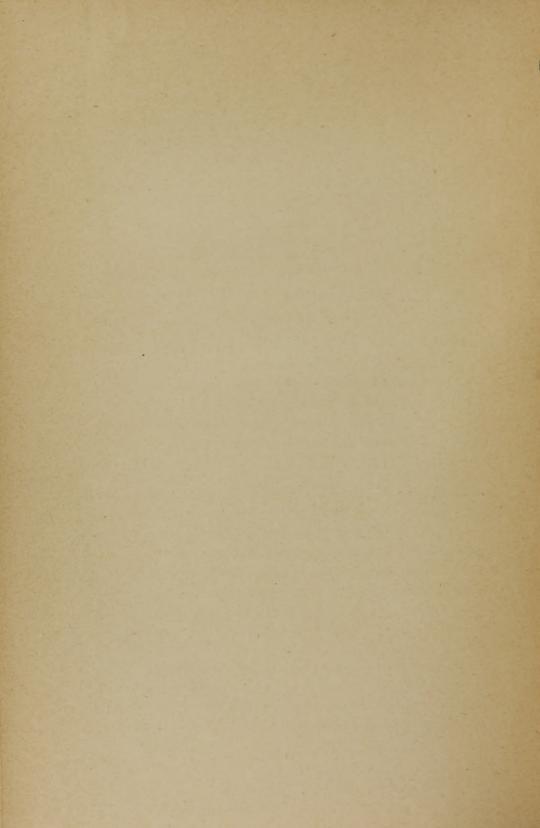
THE SYMPATHETIC MAN.

THE ORGANIC MAN.

THE CONSCIOUS MAN.

THE SUB-CONSCIOUS MAN.

THE COMPOSITE MAN.



## PREFACE TO THE FIRST EDITION.

About twenty-five years ago the author was an ardent student of anatomy, and was ambitious to popularize the subject, believing that an intimate knowledge of the human organism would prove to be of practical service, not only to medical men, but to people generally, and with this end in view, for a number of years, he delivered a series of popular lectures on the structure of the human body, in a considerable number of communities adjacent to the city of Chicago. The audiences were always appreciative, but the task proved too arduous to be long continued, and the hope of popularizing the subject by means of lectures at least died out, until it seemed necessary of late years, for humanity's sake, to aid in unifying the medical thought of the times.

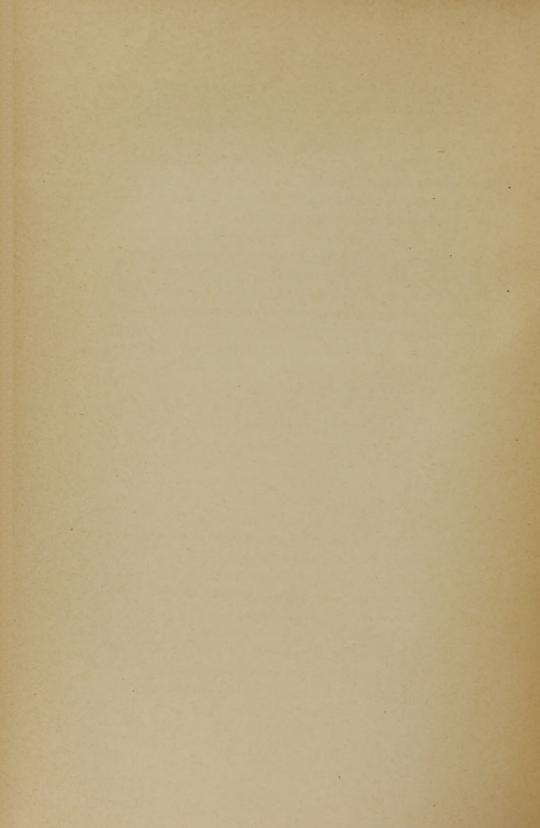
Practical medicine has been split up into various specialties, each full of its own importance. Manual therapeutics has achieved a widespread appreciation of its own merits, and suggestive therapeutics has grown to such substantial proportions as to clamor for universal recognition, while the old, time-honored temple of medicine has industriously striven to meet the ever-changing and increasing wants of humanity to the best of its ability. Each means of cure has its appropriate field of operation, and all possible remedial measures that have been found helpful in the healing of the sick are sorely needed in the great campaign of humanity against disease and premature decay. There should be no rivalry between the various methods of cure, but, on the contrary, they should enjoy mutual appreciation and helpfulness. This desirable

state of affairs can be attained only when the nature of man, both physical and spiritual, is better understood. So long as one set of healers has a care merely for the physical part of the human being, ignoring, as far as possible, all consideration of his spiritual nature and necessities, and another set refuses to recognize the claims of man's material part, but hopes to rescue humanity from its aches and pains by purely psychological processes, sick humanity can have little hope of perfect and permanent recovery. But when the dual nature of man becomes universally recognized and the fact that, so far as his present existence is concerned, he is not a mere body nor a mere soul, but both, and that each acts and reacts upon the other in both health and disease, becomes universally appreciated, practical medicine, manual therapeutics and suggestive therapeutics can sit down in friendly counsel with some hope of successfully solving the great problem of humanity's emancipation from the thralldom of sickness and suffering.

Anatomy is a long, hard and difficult study to master, and it is usually found so dull and complicated as to be forbidding to people generally. Even the indifferent knowledge obtained on the subject by medical students is secured only by long continued, patient application. Then, too, in accordance with the methods of the various text books, the body is taken apart for purposes of observation, but the unifying of the various structures into a complete whole is left to the imagination of the student, which too frequently proves to be unequal to the task. Nor is the study of anatomy as it is now carried on by any means complete, for it ignores all consideration of the two spiritual forms, the conscious and the sub-conscious shapes without which what remains is but a corpse—a man, indeed, with the man left out. The object of these impersonations, therefore, has been threefold. First, to render the study of anatomy sufficiently simple and novel to be attractive, in hopes that it may be popularized; second, to secure recognition, on the part of those who heretofore have been inclined to overlook them, of the existence of man's spiritual parts as essential elements in all that concerns his every possible condition; third, to unify the conceptions of the various parts of the human being which are usually prone to suffer a too isolated consideration. While the impersonations have been presented in a simple and light-hearted style, for purposes of interest and easy comprehension, they will be found anatomically correct in every detail.

With the earnest hope that they may be found of some slight interest to everybody who reads them, they are respectfully surrendered for public inspection and consideration, with the assurance that if they prove to be in some degree helpful to those who are seeking acquaintanceship with the structure of the human being, it will be an easy matter to render them still more so by adding to their thoroughness and comprehensiveness.

E. H. PRATT.



#### PREFACE TO THE SECOND EDITION.

The ready recognition and warm-hearted appreciation accorded to the first edition of The Composite Man is a source of great comfort to the author. The book has been welcomed by students of anatomy and by practitioners of medicine all over the country, but what is more, by the laity. The advancement of the people in a knowledge of everything that pertains to their own organization and its necessities is the greatest inspiration and encouragement to sincere healers of all kinds and the surest protection against the prevalence of fraud, quackery and every kind of imposition.

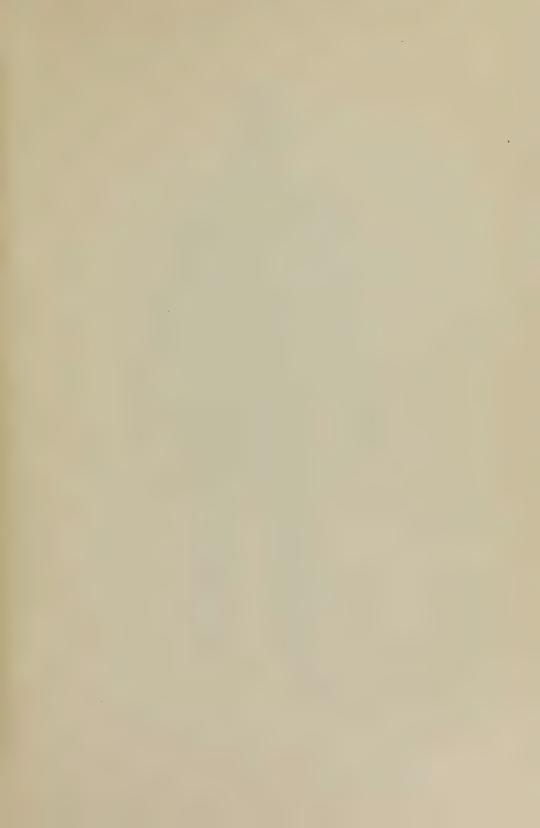
A knowledge of the whole human being sufficiently thorough to permit an intelligent interpretation of all its possible conditions of health and disease, as well as the proper course to pursue when disorders arise, is so absolutely essential as a safeguard against every variety of delusion and imposition as to be a necessary part of everyone's education. For this reason The Composite Man is ambitious for popular favor. It hopes to find a welcome in the homes of the people themselves and in their high schools. Its influence will be found to be not only enlightening, but refining.

A large part of our miseries, agonies and unhappiness generally comes from misunderstandings which are mainly the result of ignorance. What we need, therefore, is less blame, less punishment, less suffering and more enlightenment, in order that our efforts at helpfulness to all who are in trouble may be more intelligently directed and more effective.

A careful study of The Composite Man will not only explain many of the things we would have different, but, by natural inference, clearly point the way to their correction. It is meant to be everybody's book and its dedication is to humanity.

E. H. PRATT.







#### SERIES OF IMPERSONATIONS.

IMPERSONATION NO. I.—THE BONY MAN.

#### LADIES AND GENTLEMEN:

First of all, let me entreat you not to be startled at my appearance. All of my associates—the muscles, blood vessels, lymphatics, nerves, skin, areolar tissue and organs, and more than all, the unseen forms of life upon whom we all depended—have been taken away from me, and I alone am left. I am merely the human skeleton, and under the circumstances of my late bereavement necessarily a little thin and ghastly in appearance. Perhaps I was one of your best friends, but, separated from my fellow human shapes, who rounded me out and made up my deficiencies of contour, you would scarcely be expected to recognize me. I grant you my cheeks are hollow, my eyes sunken, my mouth as extravagantly large as my ears are small, my nose somewhat abbreviated, my pate bald, my neck long and slender, my collar-bones rather prominent, my ribs so thin that they can be easily counted, my waist extremely pinched, my hips expanding, my arms and legs more like pipe-stems than extremities, my fingers and toes much longer than perhaps you thought they were; but I am not proud, just honest, and I want you to know me as I am.

I am now forty years of age, and hence at my best. I am a male, as you can readily determine by my appearance. A female skeleton is not as tall as I am. Then, too, her head is smaller, her chest is narrower and, by the way, is apt to be pinched in its lower part, because, as you know, she usually dresses tighter around the waist than man does, and in that way spoils her form. Her practice in this respect is reprehensible, for aside from deforming her it interferes with her freedom of respiration, and so she does not live as long as I do. Of course, there are exceptions, but I am speaking on general principles. Her pelvis is broader and not so deep. This is no fault of hers, but is made so to adapt her for child-bearing, from which I am excused. Then, too, the surface of her bones is smooth, compared to mine. They look prettier.

perhaps, but mine are stronger. The various protuberances and ridges which roughen my surface have been developed by muscular action, for I am the bread winner of the family, and my work is heavier than hers. Then, too, I am out of doors more than she is, and am naturally more vigorous. To be sure, she is built on the same general plan, but you can readily notice the points of difference between us as just mentioned if you ever chance to see us side by side, and thus have a fair opportunity to look us over and compare us.

You may think I am a little stiff and awkward in appearance, but that is because my good friend, the muscular man, has been taken away from me and I cannot move. But I am not so stiff as I look. Instead of being just one queer shaped bone, as you might think, I am composed of two hundred and eight separate pieces, all jointed together, and so ingeniously placed as to constitute the human form which has the pleasure of addressing you on the present occasion. You may think that my head is solid, but it is not. It is merely a box for the brains which I used to have. They are all gone now, but you can see something of what I have been by what I am. My brain, you see, was so delicately constructed as to require complete protection at every point. Brain bruise is always such a serious matter that I was built closed in in this way for its prevention. My chest walls used to contain the heart and lungs, which are also sensitive organs, but they required motion on my part as well as protection, and hence my ribs do not touch. My breastplate used to protect them in front, my dorsal vertebræ at the back, but my arms could guard against danger on my sides, so that I could have my ribs raised in breathing and at the same time afford a fair protection for the important organs which I once contained.

My chest used to have a floor, but it was merely a muscular structure that was removed with the rest of the muscular man, so that as I appear to you now you might wonder how my chest could hold anything at all with such a big hole in the bottom of it. At present I have no abdomen, but just the backbone which used to support one. You would scarcely be able to guess its normal dimensions by my present shape. But I can stand straight just the same, because my spine is left. The reason my hips flare so is because they have been pulled out by muscular movements. And it is a good thing that they are so, for while my true pelvis is more or less circular and complete, thus affording protection for the pelvic organs that it used to contain, the flaring of the upper part, or false pelvis as it is

called, served very well to support much of the weight of the intestines which used to rest upon them. My legs and arms are nothing but levers, by means of which the muscles which were once attached to them could move me about at their pleasure.

If you wish to know how hard I am just feel of me and see. I was built in this way for practical purposes; for aside from furnishing substantial protection for the organs which my various cavities contained, I had to furnish leverage for the muscles whose office it was to move me about as they were directed. I am a strong character, for my office has been a hard one to fill, and a good deal has been expected of me in the way of durability and firmness. I am indeed the physical embodiment of character, and I had to be strong to fulfill my destiny.

The teeth which my jaws contain are even harder than I am, but they do not belong to me, being constructed after the skin pattern. We are not in the same class. We are both of us hard, but I am bone, while they are nothing but skin appendages. They were left in my jaws simply because I clung to them closely when I was separated from the rest of my fellows. As a matter of pride, I am glad they were left, for my mouth is large enough as it is, and if these had been also taken away it would have added much to my disfigurement, for the sockets which contain them are ragged and unsightly after my teeth are gone.

My spine is made up of twenty-six pieces, placed one on top of the other, so as to give it the appearance of one continuous bone. Each of the bones has a hole in it, so that when they are placed in their proper relations my backbone is furnished with a canal which extends throughout its entire length, with the exception of the lower bone, called the coccyx. In many of the lower animals the tail which corresponds to my coccyx is also hollow. But this is unnecessary in my case, as when I am padded with the softer parts you would scarcely realize that I have a tail bone. The tail serves different purposes in different animals. As for myself, my coccyx is for the attachment of muscles whose office it is to close the floor of my pelvis. This coccyx or tail bone of mine does not seem at all necessary to my usefulness, and in reality I am a little ashamed of it, for comparative anatomists have taken advantage of the fact that I have such an appendage and make use of this as an argument that I came of lowly origin, notwithstanding the fact that my aspirations are high. Then, too, this coccyx of mine is frequently the seat of pain, especially after it has been badly bruised, and is then frequently removed and I seem to get on just as well without it, and indeed better, for the suffering it caused me is usually at once stopped by its removal.

Please, ladies and gentlemen, do not imagine because I appear such a hard character that I am altogether stupid, inactive, and insensible. My gentler brothers and myself are but individuals in a family banded together for a common purpose, each one of us having our peculiar duties. But we are so closely united as to be indispensable to each other, so that the joys and sorrows of any one of us are shared to a greater or less degree by all of us. Of course, each one has troubles of his own of a private nature, but at the same time we are each of us pretty well aware of what the other members of the family are experiencing. We are good friends, my brother forms and myself. We started life together; we lived together and came to an end at the same time; we ate and drank together, and waked and slept together, and worked and played together. We likewise have felt our sickness in common. We all had one common plan of growth, development, repair, decay and burial. We never differed with each other, for the brotherly love which binds us together was too deep for disagreement. Our purposes of life were all in common, and hence our universal aim was to be mutually selfsustaining, although each one played his own part individually.

If you will examine my surface carefully you will find that I am all full of small holes, so that you would have ample excuse for conceiving me to be pretty thoroughly worm eaten. But let me disabuse you of this idea at once, for it is through these small openings that the soft and delicate tendrils of my immediate associates have penetrated my structure in its every part, so as to really make me one of them. Arteries, veins, nerves, lymphatics, areolar tissue, and, in fact, all the members of my family, penetrate my tissues by way of my pores, so that I am closer entwined by them and united with them than you might suppose if you had not carefully examined my minute anatomy. Of course, now that my family are all scattered, and I am practically dead, vielding up my structure by piecemeal as I am gradually disintegrated and dissolved into the elements out of which I was originally constructed, I am quite different from my normal active self. If you saw or break any part of me in two I will not bleed, or suffer, or inflame, or in any manner attempt to repair the damage. But it was quite different when I was alive. An injury then would have made me sweat blood, suffer untold agony, and bestir myself to repair any damage done me as far as lay in my power, and in this work all my brothers would have helped me. Perhaps you fancy that I was not alive, but in that you are mistaken. During that time so long as I was in good health I never obtruded my self-consciousness upon the other members of the family to which I belonged. But when it came to sickness I always found that I could do my full share in disturbing the harmony of the family. My ways were always a little slow, so that I never obtained my perfect manhood until I was nearly forty years old. But in sickness, as in development, I was always very persevering in my ways, and when I once started on a career of trouble I could hold out about as long, and perhaps a little longer, than the others.

There is little in the line of disease that I could not get up if occasion required. If I was not properly fed I would get too soft, and in this way I could make the person whose shape depended more upon myself than I have the credit for, stoop-shouldered, or hunchbacked, or bow-legged, or knock-kneed, or in many other ways badly deformed, or I could go to the opposite extreme and become so brittle that my bones would break upon the slightest excuse, and if this happened, I could keep the whole body confined until I was all right again, for when I was off duty it was perfectly useless for the rest of the family to attempt to attend to their regular business. I could get up ulcerations on my surface, which were known as spots of caries, or one of my bones could die en masse, a condition known as necrosis. I could inflame and degenerate into abscesses just as well as anybody else. I was subject to cancer, and consumption, and syphilis, and rheumatism, and almost anything else that was liable to attack the other members of my family. Of course I was not so easily disturbed as the softer tissues, because my resistance was greater. I was a stronger character. But if I did contract disease I could make enough trouble to compensate fully for my slowness in succumbing to it. You see, although I was not easily roused, I had an exceedingly bad temper when I was, and the family usually had a lively time with me before I got quieted down.

The discovery of the X-ray has been much to my advantage, for in substance I am so much denser than my fellows that they have not yet succeeded in making me transparent, and the shadows which I cast in a skiagraph disclose my outlines perfectly, whereas there is not another one of the human shapes with which I am connected that enjoys this distinction. When any of my bones are broken, or

diseased, or out of place, surgeons are able to find it out now much quicker and more surely than before, and consequently I am able to obtain more speedy relief than formerly.

I was just as proud as my brother tissues, for I was an indispensable member of the family, and what affected them affected me, and, on the other hand, whatever affected me I can tell you affected them also. In fact, when I was really in trouble and entered my complaints at headquarters, I always commanded a hearing, and very little other business could be attended to until my wrongs were righted.

In all probability, when you meet the other members of the family to which I belong you will feel a deeper interest in what they have to say of themselves because they can talk faster than I can, and perhaps tell their story better. At the same time, my own inner consciousness and self-respect compels me to insist, ladies and gentlemen, upon my full share of recognition when it comes to making up an invoice of the various bodily structures that enter into the composition of a human being. I am not dead in a living body, but as much alive as its other shapes. I own that I am not independent of my fellows, and honestly confess that I cannot live without them, so that as you see me on the present occasion alone, stripped of my kindred, the pallor of death is upon me, and I am talking to you in the dumb language of mere appearances. What I am, therefore, is but a mute witness of what I have been, and to do me justice you will have to imagine me tingling with whatever sensations may have swept through the entire body, think of me ruddy with its life currents, requiring constant nourishment for repair and funeral trains for my waste, as, like the other tissues, I have all my life been dying and repairing by piecemeal, and as the whole body has been healthy and happy, I, too, have enjoyed life. When it has been sick and sorrowing. I have likewise suffered.

I wish I knew the name of the writer who dedicated some verses to my memory and pinned them to one of my kind in the British Museum, for few writers, especially poets, have given me the prominence which my important office in the human economy has seemed to me to merit. But I appreciate the compliment of this meritorious composition so highly that I will close my remarks by quoting the verses:

#### TO A SKELETON.

Behold this ruin! 'Twas a skull, Once of ethereal spirit full. This narrow cell was Life's retreat, This space was Thought's mysterious seat. What beauteous visions filled this spot, What dreams of pleasure long forgot? Nor hope, nor joy, nor love, nor fear, Have left one trace of record here.

Beneath this mouldering canopy Once shone the bright and busy eye; But start not at the dismal void— If social love that eye employed, If with no lawless fire it gleamed, But through the dews of kindness beamed, That eye shall be forever bright When stars and sun are sunk in night.

Within this hollow cavern hung
The ready, swift, and tuneful tongue;
If Falsehood's honey it disdained,
And when it could not praise was chained;
If bold in Virtue's cause it spoke,
Yet gentle concord never broke—
This silent tongue shall plead for thee
When time unveils eternity!

Say, did these fingers delve the mine? Or with the envied rubies shine? To hew the rock or wear a gem Can little now avail to them. But if the page of truth they sought, Or comfort to the mourner brought, These hands a richer meed shall claim Than all that wait on Wealth and Fame.

Avail it whether bare or shod,
These feet the paths of duty trod?
If from the bowers of ease they fled,
To seek Affliction's humble shed;
If Grandeur's guilty bribe they spurned,
And home to Virtue's cot returned—
These feet with angel wings shall vie,
And tread the palace of the sky!

-Anonymous.

Thanking you, ladies and gentlemen, for your presence and kind attention, I will detain you no longer. I am but one of a number of human shapes that will claim your attention. These will present themselves to you in due order, and in closing I bespeak for my brothers as attentive consideration as you have so kindly extended to me, and when the story of our entire family of human shapes is all told, you will find the separate descriptions but brief and inadequate chapters in the life story of the Composite Man.

The next speaker, whom I will now leave to introduce himself, as I have had the privilege of doing, will be the muscular man.







THE MUSCULAR MAN.

#### IMPERSONATION No. 2.

#### THE MUSCULAR MAN.

#### LADIES AND GENTLEMEN:

I am the muscular man. My bony brother promised that I should tell you something of myself on the present occasion, and not to disappoint him, for we were always great chums, I shall do the best I can to entertain you for some time, although I am ill conditioned for the effort.

The fact of the matter is, I feel greatly embarrassed. This is the first time I was ever separated from the brotherhood of human shapes like my own, which go to make up the composite structure known as the human being, and now that I am entirely alone I do not feel at all like myself, I can assure you, and never before have I so completely realized my dependence upon my brothers.

I am naked, hollow, motionless, bloodless, nerveless and senseless. I feel completely subdued and humbled. My pride is all gone, for I am now as helpless as a child and withal utterly useless, except, perhaps, to point a moral ruinous to the spirit of vanity, pride and selfconceit. I find that instead of being a source of power, as I once supposed myself to be, I was merely its instrument of expression. You see in all our family matters I was personally responsible for every possible form of activity, internal and external, except that of chemical action, and it was quite natural that I should get an exaggerated idea of my own importance. I did all the walking, running, jumping, climbing, descending, all the bending, straightening, twisting, turning, all the laughing, sobbing, sneezing, coughing, swallowing, talking, all the beckoning, signaling, writing, cutting, sewing, working, playing, all the breathing, circulating and propelling, whether of solids, liquids, or gases; indeed, all the supply trains and funeral trains of the organization of which I was a part, were run by myself. If an attitude was to be changed, I had to do the moving; if any type of bodily function was to be performed, I was called upon to accomplish it.

To perform all these varieties of uses in an orderly and syste-

matic manner, I was constructed with two kinds of muscular fibers. One of these constituted the most of my bulk, and was of what was called the voluntary type. By means of these voluntary fibers I could race and wrestle with the rest of the world, or carry out in every possible manner the orders of the individual in whose service I was employed. My orders for action rested purely with the head of the family, and whatever I was bid by him to do I did my best to accomplish. I grew strong in my service, for exercise always increased my power, and I had enough of it, I can assure you. I would start out early in the morning, as soon as the family was awake, and after performing the toilet of the body according to orders, would rush into the business of the day as energetically as I was bid. Sometimes I had an easy time of it, but as a rule I was greatly overworked, and by bedtime, in spite of all that was done to strengthen and stimulate and care for me, I would become so fagged out that I could go no further, and as there was no one else to execute orders for physical activity except myself, I would put the whole family, myself included, to bed and refuse point blank all obedience to further orders until I had had a good night's rest. Much more than I could accomplish was always expected of me, but I tried to be patient with it all, and invariably did the best I could to render faithful service in everything that was demanded of me.

Whenever sickness prevailed of course I suffered with the other members of the household, and was excused from my customary occupation whatever it might be. At such times none of us could work, and we simply did as our circumstances and condition would permit. Upon the ushering in of convalescence I was put to work again as usual, only we were all of us, I think, a little more careful after such an experience to avoid its repetition. In my younger days I was as ignorant and foolhardy as my kindred shapes, and was liable to go to extremes and strive on the slightest provocation to achieve the impossible. But bumps and bruises and failures and disappointments and disasters of all kinds soon outlined clearly enough what could be expected of me, and as time went on I was treated with more consideration. On the other hand, if there was any fun going on I was always in it, in fact was the prime mover, as without my service hilarity might be felt but could not get so far as physical expression. Smothered mirth is not very jolly anyway, and if I had no hand in it I knew what was going on all the time, and did not feel that I had lost anything in missing credit for it.

As for sickness, although the individuals of our family each had personal peculiarities, yet we sympathized with each other so thoroughly that it always became more or less of a family affliction whenever it broke out. I do not feel like speaking for the entire family, but there were some kinds of sickness toward which I felt an especially strong personal aversion. For instance, there was rheumatism. It may not be considered very dangerous, but it is invariably distressing and annoying as well. When it was located in the joints of the bony man I had to keep just as quiet as I could, for every move that I made seemed to distress the whole family, and yet confinement was always weakening and wearing upon my nature. I was almost as bad when rheumatism selected my nervous brother for its victim, for although whatever action I might indulge in did not set up the general disturbance which was aroused when the same thing occurred in rheumatic affections of the joints, nevertheless if I was at all active the trouble got gradually worse, until at last I found that I must remain perfectly quiet until the disease was mastered. When the attack of rheumatism was directly personal, I was then as helpless as a child until the disease abated. At such times I enjoyed the full sympathy of all the members of the family, and nothing was expected of me until I fully recovered.

There were a few diseases in which I was called upon to do very painful service, for which I felt in no wise responsible, for personally I was all right, only as I suffered sympathetically. For instances, in epilepsy, tetanus, and sometimes as a result of some form of intestinal irritation or kidney disease, I was commanded to institute such violent and spasmodic contractions as to throw the whole body into violent convulsions, which were always agonizing, and dangerous. I was never my own master, however, and always did as I was bid. But sometimes my duties seemed almost suicidal. It was a great relief when such storms had passed, and I could be permitted to resume my customary equilibrium. I was always very sensitive to strains and bruises and toxines of all kinds, and I was also liable to cancer. But I am pleased to tell you that I did not have consumption, although I was by no means exempt from such a possibility. A cold usually stiffened me, and I was always at my best when more or less heated up. Too protracted and violent exercise frequently made me cramp, and sometimes I could not stop it and my tendons had to be cut in order to restore the body to its normal shape.

The venous and arterial men had no more to do with me than

was necessary for my personal well-being, except that in many places I afforded them protection from outside dangers. For instance, the great acrta passed between the crura of the diaphragm and the inferior vena cava pierced the diaphragm itself. But the fibers of this muscle were so arranged that in their time of contraction they would not compress either of these blood streams, but on the contrary permit them to be well opened so that their functions were not interfered with. By prolonged spasmodic contraction I frequently interfered seriously with the normal circulation of the blood, and in many places about the head and trunk, especially the spine, and in some places also along the extremities, my relation with the blood stream was such that when I suffered, in any of these places, undue and marked muscular contraction, the bodily commerce was so seriously interfered with that I was prone to cause diseases of various kinds, which were sure to last until my fibers, by the aid of electricity, manipulation, drugs, or some other efficient agent, were relieved of their contraction and restored to a normal condition.

This statement applies with equal force to the cerebro-spinal man. I had little to do with the two nervous men, the cerebro-spinal, and the sympathetic. The cerebro-spinal man mingled in my tissues as a rule simply enough to keep me in communication with the rest of the human being. The pneumogastric nerve, however, pierced my diaphragm. The spinal accessory nerve passed through my sterno-cleido-mastoid muscle on either side, the entire lumbar plexus of nerves, which had so much to do with the pelvic walls and viscera, lay imbedded in the meshes of my psoas magnus muscle on either side, and beside these conspicuous examples I was repeatedly pierced in different parts of my anatomy by multitudes of smaller nerve trunks of the cerebro-spinal man, to say nothing of the multitudes of large nerves which ran along in the grooves between, and in many cases beneath my muscles. Undue and prolonged contraction of my fibers at any point where it rendered nerve impingement possible worked untold mischef to the function of the nerves involved and gave rise to functional derangements and organic pathology to such a varied extent as to entirely deceive many an accomplished diagnostician as to the real cause of the disorder.

But perhaps I have said enough of my afflictions. I simply wish to call attention to the fact that whereas from my relationship with my fellows I was made to suffer more or less with whatever disorder they might, any or all of them, become afflicted, at the same time personal afflictions peculiarly my own might in turn work mischief to

the rest of the family. Our family was always and at all times mutually dependent and considerate. We always found that brotherly love was best for us all, so we had our joys and sorrows in common.

It is not necessary for me to say anything in this connection of the sympathetic man or the other members of the brotherhood, as each of these shapes will speak for himself later on, and will amply supply any omission of importance which may characterize my remarks on the present occasion. Perhaps I ought to mention, however, that although the bony man and myself were especially good friends, not by any means belittling thereby my intimate relationship with the entire family of human shapes, there is one of my brothers who was more to me even than the bony man, and that was the areolar or connective tissue man. In fact, so closely united were the areolar man and myself that although on the present occasion I am appearing before you as purely the muscular man, separated entirely from all my kindred, such in reality is not the exact state of the case. I could tear myself loose from the bony man, become disentangled from the arterial, venous, cerebro-spinal, sympathetic, lymphatic, and all the other men except one. Do you know I had to coax the areolar man to stay by me, or I could not have preserved my present shape. That faithful fellow has hugged me like a brother from childhood tip. He has enclosed my every fiber, indeed pierced my fibers and enwrapped my fibrillæ, and going yet further, has constructed for me my very cell walls, without which all my contents would be dissipated.

This areolar man has other duties to perform than that of sustaining and enveloping me, and in due time he will speak for himself, as the bony man has done and I am now doing. At the same time I thought it proper in this connection to at least mention my dearest physical brother upon whose faithful service and proximity my very shape depends. He's a jolly fellow, I can tell you, and if his native modesty does not prevent him doing himself justice, you are bound to like him when his turn to entertain comes. The most of the bulk of this most perfect of human shapes, the areolar or connective tissue man, has been removed before I presented myself before you for your consideration. But enough of him still remains to enable me to preserve my identity and permit me the distinguishing feature of the manly form which alone entitles me to your audience. But I must not bring my remarks to a close without brief reference to those of my muscles which are constructed of what is known as the involuntary fibers, whose office, although less conspicuous than that of the voluntary muscles, is nevertheless of vital importance to the human structure.

My voluntary muscles, of which I have already said all that is necessary for the purposes of the present set of tissue biographies, may work a part of each twenty-four hours and sleep the rest, pursue occupations, assume relations and positions at the behests of the erratic and whimsical cerebro-spinal man, thus enabling an individual to entertain purposes and strive for their accomplishment, and then rest. But my involuntary muscles enjoyed the supreme distinction of actively executing the entire bodily commerce. Their action was rhythmical and perpetual throughout the life of the body, their only periods of rest being the short intervals of their diastole. Perhaps it never occurred to you that the entire bodily commerce was carried on by tubular action. If a drop of sweat appeared upon the surface of the skin it had been squeezed by muscular contraction out of a small tube. If a drop of oil anointed the surface of the body or the shaft of a hair, it had been milked to its destination by muscular contraction: if saliva reached the mouth, it had been conveyed there from the salivary glands by the action of the muscles; after food was once swallowed, if it passed along the esophagus to the stomach and along down through the entire twenty-six feet of the intestinal track, its propulsion was accomplished by muscles; if peptic juice greeted it in the stomach and pancreatic juice and bile greeted it in the duodenum. and other digestive products anywhere along the track were mingled with it, these were all forwarded by muscular contraction; if urine trickled from the cortex through the pyramids into the pelvis of the kidney, down the ureters into the bladder and out of the urethra at any time, it was made to do so by muscular action; if any ovum was hatched, propelled along the fallopian tube into the uterine cavity, impregnated, and after nine months of gestation, or at any time before, expelled from the body, this was all accomplished by muscular action; if semen was formed by the testicles, carried by way of the vas-deferens into the prostatic inch, and was ejected by way of the urethra. all this was accomplished by muscular action; if mucus was poured out upon the surface of any membrane for purposes of lubrication, or from inflammatory action, this was accomplished by muscular action; if air, entering the nostrils and passing through the larvnx into the trachea by the suction of inspiration, was carried on through the bronchial tubes into the bronchioles and thence into the air sacs. it was done by muscular activity; if blood was thrown by the left side of the heart into the aorta and thus through every branch of this great tree of life into the sea of the capillaries, and from these was again collected into the coalescing veins, to be returned to the right auricle of the heart, pouring thence into the right ventricle, from which it proceeded into the pulmonary artery and its branches to the capillaries of the lungs, where it was purified and then passed on into the pulmonary veins which emptied into the left auricle of the heart, from which it was forced into the left ventricle, all this wonderful circulation of the molten individual was secured by muscular action; if the lymphatics collected waste material from the outskirts of the body and conveyed it into the venous circulation, it was accomplished by muscular action. In short, as asserted, all the bodily commerce except osmosis was accomplished by tubes, and all tubes secured their vermicular motion by the action of muscular fibers. These fibers, my friends, were of the involuntary type. They were non-striated and did not obey the commands of the cerebro-spinal man. The condition of my voluntary muscles could be told at any time by various methods of physical exploration. Their condition of contraction and relaxaation, of atrophy and hypertrophy, of stiffness or suppleness, could in most cases be easily ascertained.

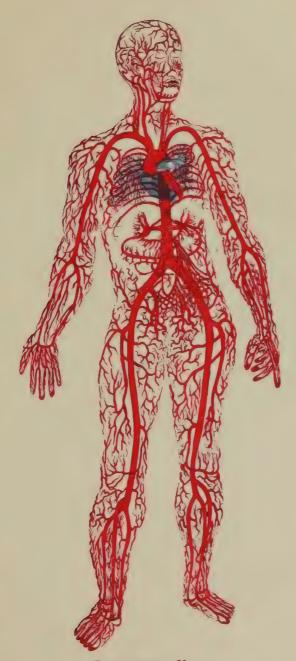
But my involuntary muscles were hidden deeply in the recesses of our human structure, and their condition could only be told by the varying degrees of vitality with which the functions depending upon their operation were performed.

I was proud of my voluntary muscles, for they made me conscious of my manhood, my freedom, my personal prowess. My involuntary muscles concerned me more from the mere fact that they were absolutely essential to my very existence, and indeed to that of the entire family. Perhaps my voluntary part was the bread-winner -but it was my involuntary part that got the meals and kept us all alive. All the supply trains for the growth and repair of bodily tissues, and all the funeral trains by which every type of physical debris was carried away, were managed by my involuntary muscles. Vermicular motion, or peristalsis, as it is otherwise called, is so noiseless and unobtrusive as to escape the attention and consideration which its importance demands at the hands of the medical profession. My voluntary part was moved perpetually by the cerebro-spinal system and acted upon the bones, using them as levers, a mere perfunctory service, by means of which I could adjust myself and family to other physical existences according to my orders. But when my involuntary part was set in motion it acted upon all tubular contents, which were sometimes solid, sometimes liquid, sometimes gaseous, and its rhythmic operations were essential to all bodily functions.

Now I beg of you, ladies and gentlemen, that so far as you are concerned you will see to it that my involuntary part is no longer neglected and that you will espouse its cause until its importance becomes universally recognized and appreciated. Artisans, athletes and physical laborers of all kinds will pay due consideration to my voluntary fibers, but it will take careful study and extensive education to win a proper respect for my involuntary part.

It strikes me that you deserve great credit for your attention, for my remarks to you must have been exceedingly tame, as it has been impossible for me to enliver you with any form of activity. My voluntary muscles have had nothing to move, for the bony man has left me. They had no orders to move, for the cerebro-spinal man has also been disentangled from my meshes. They had no strength to move, for it is some time since the arterial man has furnished them with nourishment. (Of course you can see how unnaturally pale I am.) My involuntary part could not move, for all of the tubes about which it entwined itself are empty, and it was never taught to move except as its fibers were distended by excessive accumulations of some kind of contents or were irritated. Then, too, the sympathetic man is gone, and were my involuntary fibers never so distended they would merely gap in paralytic helplessness. You see, therefore, instead of being a power, as I once fancied, I served but as an instrument of an indwelling force, whose existence I ignored because it did not appeal to my consciousness.

Ladies and gentlemen, kindly permit me to introduce to you the arterial man, who will read you his own biography at your next meeting.



THE ARTERIAL MAN.



#### IMPERSONATION No. 3.

THE ARTERIAL MAN.

LADIES AND GENTLEMEN:

Well, here I am, just as my brother form, the muscular man, promised you.

Although the bony, muscular, and all other human shapes have left me and I am before you alone, separated completely from the rest of my family, the human form which I constitute is a very perfect one, for my blood vessels permeate every part of the human being.

If I belonged to the vegetable kingdom my proper classification would be the tree of life, my heart constituting the roots, my aorta, which was my main artery, the trunk, and all the rest of my arteries branching from this in every conceivable direction, the branches growing finer and finer as they approached their varied destinations in the other tissues until ultimately they terminated in a net-work of vascular loops which connected me with the venous man, so fine in caliber as to be indistinguishable by the naked eve and called the capillaries. These would properly be called the leaves of the tree of life. The figure is not a bad one, for as in the historical tree its leaves were for the healing of the nations, so my capillaries were for the healing and building up of the entire physical man. By the way, I never have had the opportunity of looking in the glass, and it would not serve any purpose if I had, for my eyes are nothing but bloody eves and I am as blind as a bat. But it occurs to me as my heart and larger arteries are large enough to be seen by the naked eye, and my capillaries in which my small arterioles terminate in every part of the body are so fine as to be indistinguishable by the naked eye, my outlines instead of being well defined as I appear before you must fade out so gradually as to give me the appearance of being completely surrounded by a sort of a halo. You might mistake my margins for a fine fuzz and think if I lived long enough I would feather out. But you would be wrong, as I can assure you that I have no closer relationship with the feathery tribe than I have with the rest of the physical creation, and my peculiar appearance in this respect is simply due to the fineness of the subdivisions of my arteries as they disappear in the sea of capillaries which is their ultimate destination. You see at my periphery I, as it were, melt away into the invisible. My heart and most of my arteries are plainly visible, but as these grow smaller and fade out into the capillaries I become invisible. So in part you see me, but in part you do not see me.

You know that so far as my brothers and I are concerned we were all constructed of minute cells, varying in shape and size, but always so diminutive as to require the use of a microscope to bring them within the observation of the anatomist. There could be no skin man, areolar man, nervous man, muscular man, or any other kind of a man unless cells were employed in his building, just as bricks are employed in the building of a brick house. The cells of different kinds were closely molded together in such shapes as to constitute the various tissues out of which our whole body was constructed. Yet there was not a single cell in the entire human being the material for which had not been carried along my arteries out into my capillaries, and through these poured into the adjacent tissues. In consequence of this fact I used to flatter myself that I was the direct means by which our whole family of human shapes was in the first place constructed, and that in the same manner I was the direct agent through which all repairs were made.

Although I myself was called a perfect human shape, nevertheless I will have to admit that in some places a part of my shape was formed by bones, in all places the muscular man contributed to my formation, so also the venous, areolar, lymphatic, and both nervous men, in fact all the other human shapes had more or less to do with my building, and the knowledge of this fact was probably all that kept me from feeling a sense of superiority over my brother men. It seemed as though in a sense I was more important than they were, for I brought the material for the construction of every one of them, and I was constantly supplying material for the extensive repairing which they all of them seemed to continually demand, and it kept me busy, I can tell you. The eyes wanted my blood, so did the ears and all of the parts of the head, neck, trunk and extremities, and I controlled the entire blood market and gave my whole time to supplying it for the others to feed upon, taking, of course, for myself what little I needed for personal use. In supplying my own wants, however, I wish it distinctly understood that I never under any circumstances supplied myself from the general blood supply of which I had entire charge. This mass of liquid flesh, the blood, was entrusted to

my keeping for the benefit of the whole family and I had to give an account of every drop which came into my channels. So instead of taking a mean advantage of this public treasury as thousands of public officers in similar places of trust are so sorely tempted to do, I carried it to its destination, wherever it might be, completely unmolested and in as good condition as when I received it for transmission. Of course a certain amount of blood was necessary for my own building and repairing, but this was supplied by a separate set of blood vessels, called the vasa vasorum, and I put in my demands for nutriment by way of these minute blood vessels on the same plan as was observed by the other members of our physical family. You see I was salaried. I was born honest, and I never betrayed a trust. Every bit of blood that was entrusted to my keeping was honestly given up again and my sole source of supply for my own necessities was what was allotted to me by the little system of the vasa vasorum. As you see me to-night my blood has all been drawn off and I am nothing but a set of hollow tubes of various sizes, so arranged as to be rounded out into a very complete human form.

I have been called the arterial man for a good many years. When the first anatomist discovered me it was in a dead body, and as I am filled with blood only during life, of course he found that I was hollow just as I am now and so he thought I was full of air when carrying on my business in the body, and hence the name artery, from aer, signifying air. It strikes me as singular, now that anatomists know better, that this man's ignorance has not been wiped out of the textbooks and a name given me that was truer to life; but I have been called the arterial man so many years that I suppose my name will probably remain unchanged so long as physical creation lasts. my continuing to bear the old name which the first anatomist in his ignorance gave me, shows one thing very plainly, that the mistakes of men are frequently indelibly stamped upon the ages which follow. The old anatomist is dead and forgotten, but because he thought I was full of air and therefore dubbed my branches arteries, therefore his anatomical blunder seems destined to advertise his ignorance for all time.

I am not the only instance of such bad naming in the human organism, but I do not like it just the same, and although there is little hope that my branches will ever be called anything but arteries I thought I would take this opportunity to register my grievance. For the reason that it is a misnomer I do not like the term artery in spite of the fact that I cannot help it and expect to endure it for the rest of

time. I do not know that it matters much, however, if you all understand that, although my tubes are said to contain nothing but air when our family of forms has ceased its activities and begins to disintegrate (being what is commonly termed as dead), when in the living state and ready for the business of the world there is not a bubble of air in me, but I am completely filled, from heart to capillaries, with that great bright red fluid of life known as human blood. (In one of my arteries—the pulmonary—I carry black blood, but only a short distance). My heart, like my arteries, is a hollow organ, located in the lower part of the chest, inclining to the left side. Its point is downward and toward the left, being two and a half inches to the left of the middle line and as low as the intercostal space between the fifth and sixth ribs of the bony man, its base directed upward and to the right, extending as high as the costal cartilages of the third rib and one and a half inches to the right of the middle line. This brings the body of my heart behind the lower part of the breast bone, or sternum.

I sometimes thought that my lot was a hard one, because I had no opportunity to rest from one end of life to the other. There was such a steady demand for the blood which I contained that I had to keep the stream in motion day and night, winter and summer, year in and year out—until myself and my brother forms gave up the ghost and passed into dissolution—from sixty to seventy times per minute in health, and in disease from twenty to one hundred and eighty times per minute (which was about as fast as could be counted). The pulsations of my heart and the throbs of my arteries must be perpetually made as ordered by one or both of the nervous men.

I dealt in two kinds of blood. The blood which was poured into the left auricle of the heart (that being the upper compartment of the heart on the left side) as it came fresh from the lungs, was thoroughly oxygenated if the lungs had done their duty, and was bright red in color. As soon as the auricle was full its muscular coat contracted and forced it down into the left ventricle of the heart, by way of the opening between the auricle and ventricle, which was called the left auriculo-ventricular opening. This was guarded by what was known as the mitral valve in such a manner that when the left ventricle contracted, which it did just as soon as it was full, the valve was completely closed, and it thus became impossible for the blood to be forced back in the direction from which it came. This compelled it to pass upward into what was known as the arch of my aorta, which is the largest blood vessel of my form, and then it

passed through numberless channels to its destination in my capillaries. At the same time that the left side of the heart was thus forcing the blood all over the body a similar function was being performed by the right side of my heart, only the blood which the right side of my heart handled was black or venous blood, and instead of pumping it to all parts of the body as the left side of my heart did, the blood which it contained was only sent as far as the lungs by means of my pulmonary artery with its branches and capillaries.

You see the blood was poured into the right auricle of my heart by means of the two big central branches of the venous man, the superior vena cava bringing the black polluted stream of blood from the upper part of the body and the inferior vena cava bringing the same kind of blood from the lower part of the body. As soon as these streams had filled the right auricle of my heart, its walls contracted, forcing the black blood through the right auriculo-ventricular opening into the right ventricle of the heart. This opening between my right auricle and ventricle was guarded by what is known as the tricuspid valve, whose arrangement was quite similar to that of the mitral valve of the left side, so that when my right ventricle contracted the blood could not leak back into the right auricle of my heart, but passed through the pulmonary artery to the lungs. The two halves of my heart worked with a uniform rhythm. My auricles were filled and emptied, as were also my ventricles, at the same instant, although the left side handled the bright red, or arterial, and the right side the dark red, or venous, blood. The walls of my auricles were of about the same thickness, for the distance which they had to carry the blood was the same on the two sides of my heart, being merely from the auricles down into the ventricles. But with the ventricles it was different. My left ventricle had to pump the blood as high as the head and as low as the feet and as far out as the ends of the fingers and everywhere between, while my right ventricle only had to carry the blood as far as the lungs. That was why the muscular walls of my left ventricle were about three times as thick as the walls of my right ventricle. But they always contracted at just the same time, so that a superficial observer would scarcely suspect there being such a difference in their functions. When my ventricles contracted the blood was forced out into my two largest arteries, namely, the aorta, which received the bright red blood from my left ventricle, and my pulmonary artery. which received the black blood from my right ventricle, with tremendous force; indeed it started a wave which throbbed through every

artery of my organization and did not stop until it reached the great sea of my capillaries.

You can imagine with what speed the blood rushed along my hollow walls when you stop to think that the ventricles were completely emptied in a full grown person from sixty to seventy times per minute, and that a blood corpuscle could make a complete circuit of the circulation, starting from the left side of the heart, passing along the arteries as far as any of the capillaries, back through the veins, through the right auricle of my heart, down into my right ventricle, to the lungs, back from the lungs into my left auricle, and down again to my left ventricle, where it started from. in about two minutes' time. This is not quite as quick as an electrical or a thought wave, but it was an accomplishment of which I was quite proud. Some would regard my work as very monotonous, as it had to be kept up as a steady thing, in sickness and in health, during activity as well as repose, as a regular supply of blood was demanded by every one of our human forms throughout life, and I am one of the shapes that was never permitted to rest either day or night. I was always deeply interested in my work, however. I could never tell where my blood came from nor where it went to, as I was always in the habit of minding my own business and simply performed my duty of passing it on. But I knew that life and death for our whole family depended upon my personal efforts, and I was keenly alive to the responsible position in which I was Sometimes my muscular fibers, through imperfect connection with the nervous men, would either shut down too tightly and narrow the caliber of some of my arteries, or else let them stand too wide open from a condition known as paralysis. either case my blood stream would be obstructed, my precious burden would not reach its destination, and as I knew I would be blamed as soon as my imperfectly performed function was found out I suffered all the tortures of a messenger who had an important mission entrusted to his keeping and which he was not able to execute.

The organs or tissues that relied upon my affected arteries for their customary blood supply, failing to receive it, would starve and sicken and set up serious mischief for the whole family, for the organs of our body are so closely associated that suffering in any part was communicated more or less perfectly and immediately to all other parts, and when one of our family was sick we were all sick. A knowledge of this fact was sufficient incentive to me to do my whole duty by my family and leave no stone unturned so far as I was con-

cerned to complete a well-rounded physical career. My conscience has always been clear. My nervous brothers, the cerebro-spinal and sympathetic men, could not always agree as to how hard I should work, and in consequence my orders were frequently contradictory and this always made trouble. I was fretted a good deal in this way, and when there was any serious difficulty from this cause my nervous brothers always had to come to some sort of an understanding before my functions could be again properly established. I got very tired sometimes and would have liked to have been relieved from such steady employment, but it was useless to complain, as there was no one else to do my work. My duty was a very exacting and trying one. If I accomplished my work too fast or too slow, or became the least bit unsteady in it, my whole family was upset and disaster to us all was sure to follow sooner or later.

I had nothing to do with returning the blood from either the lungs or the other tissues to my heart, as I had a twin brother, the venous man, who accomplished this function. It was all that I could do to distribute the blood from the heart to the lungs and to the other tissues. I will say nothing of its return, as my venous brother is perfectly capable of speaking for himself and will present his autobiography to you at your next meeting.

If I have given you the impression that my heart was the sole propelling power of the great blood stream which rushed along my channels permit me now to correct it. My arteries, which extend from my heart to my capillaries, whether they were large or small, consisted of three separate coats. The innermost coat or tunica intima, as it was called, was a serous membrane continuous at one extremity with the lining of the heart and at the other with the capillaries. Its surface was covered with what is known as pavement epithelium, so as to render it perfectly smooth in order that the rush of blood might find no obstacle in its way. My outer coat, called the tunica adventitia, was a membrane furnished me by the areolar man for my comfort and protection from the encroachment of my fellow shapes. It held me in place by its attachments to the sheaths which encased me and made a soft bed for me to lie in, besides adding to my strength and elasticity. If one coat was more important than the others perhaps it was my middle coat, which had been woven for me through the kindness of my brother, the muscular man. The fibers thus furnished me by my muscular brother for my middle coat were all of the involuntary type, and they were arranged about my tubes in layers. Although the fibers themselves were very short, by overlapping they constituted a thick heavy tunic, which formed most of my thickness. In these layers the fibers on the outside were arranged longitudinally, and when they contracted shortened the artery which they surrounded, while those of the inner layers passed around the caliber of the artery in a circular manner, so that when they contracted they narrowed the caliber of whatever artery they surrounded. By this arrangement I was capable of peristaltic action, just like the sweat glands or intestinal tract, or any other of the tubes of the body, concerning which my brother form, the muscular man, has already spoken to you and my tubular brother who is still to be heard from, will explain.

Now all the heart had to do was to pump the blood into my arteries, the left ventricle into my aorta and the right ventricle into my pulmonary artery. Just as soon as this was accomplished I had three little valves in each of these arteries right close to the heart which immediately closed, so that it was impossible for the ventricles when the heart was relaxed to receive the blood back again. These valves in their appearance resembled a half moon, and were consequently called the semilunar valves. Any who wish may examine them at the close of my talk. When the blood attempted to rush back into my heart after the contraction of my ventricles, it found its way behind these valves and threw them together suddenly with a click, known as the second sound of the heart. But they were equal to their task, and when my ventricles had once emptied themselves my semilunar valves were immediately closed and not a drop of blood leaked back. To be sure my heart acted with considerable force and sent a tremendous wave out into my arteries. But this wave would soon have ceased and by no means be expected to reach as far as my capillaries if the middle coats of my arteries did not first relax to receive the approaching wave, and then immediately contract and continue the impulse along my entire arterial length. The heart started the impulse which made my arteries pulsate, but my arteries themselves kept up the throb by their rhythmical peristaltic action until my muscular coat stopped and the innumerable small streams of blood found themselves lost in the ocean of my capillaries. was no pulse beat in my capillaries, but there was in every other part of my structure, and I want you to understand that the heart did not deserve all the credit for my universal pulse.

You see the blood which I contained was really the liquid person. None of my brothers could ever have taken shape except for me. I held all the tissues of every one of them in solution, and was responsible for circulating not only the crude physical material out of which they were all constructed, but also the vitality which supplied them with the very ideals by which they were each and all of them built. The blood stream was truly the river of life, which was immediately responsible for every type of organic function and physical activity, whether of growth, of function or of repair. A knowledge of this fact would have been likely to inflict me with my own importance if it had not involved also a deep sense of the responsibility of my office, for our entire family of bodily shapes were charges placed in my keeping, and so keenly did I feel the importance of my function that I had no time for conceit or pride of position. The fact of the matter was that we were all mutually dependent upon each other, and in reality no member of our wonderful family of human forms could be spared without destroying the entire family, and hence as this fact was known to all of us, conceit was not one of our temptations. We never debated the question as to who was the greatest, but simply went on each with the duties allotted to him to the best of his ability, always working in harmony, each for the benefit of the others. We were never unhappy unless some one of us was sick, and we were so closely united that when one of us was sick we all suffered in common, a fact that will be considered more at length by one or more of my brothers who will speak to you later on.

You will observe that I am one of the tubular members of our body, and that my service to our human being was performed by peristaltic action. In this capacity I enjoyed a distinction over all the other tubes except my twin, the venous man, and also the lymphatic man. For instance, there were the sweat glands, sebaceous glands, mucous glands, kidneys, ureters and bladder, the intestinal tract, the uterus, vagina, and testicles, and the bronchial tubes, all of which performed their functions by peristaltic action the same as I did. The muscular fibers by which these peristalses were accomplished in all of the tubular organs, myself included, were of the involuntary type and hence were under the control of the sympathetic nervous man, the cerebro-spinal man controlling the voluntary muscles only. Thus you will readily see that peristaltic action, which was the mode of activity employed by the tubes of our body, was presided over by the sympathetic man. In this respect my own peristaltic actions enjoyed a special distinction from that accorded the other and less consequential tubes. My muscular coat consisted of involuntary fibers just as all other tubes did. But the nervous

force which kept them in rhythmic operation was not supplied solely by the sympathetic nerve. The cerebro-spinal system sent out innumerable tendrils, which, joining with similar ones from the sympathetic, mingled together in a net-work of entangling fibers, which were twined about my entire structure from heart to capillaries, constituting a special set of nerves known as the vasomotor system. By this arrangement you will see at once that while the rest of the tubes of the body had directly but one source of nervous supply upon which all their operations depended, namely, the sympathetic, in my own case I was under the direct influence of both nervous systems. My nervous brothers will each of them address you in due time, but right here it will do no harm to mention one or two of their characteristics, as this seems necessary to explain why I was under the control of both of them, and also why my regular business was frequently interfered with until sometimes I scarcely knew whether I was afoot or horseback, so to speak. This fact also explains our premature death.

You should know that my cerebro-spinal brother was a very selfconscious fellow. He saw and heard and smelt and tasted and felt our way through the world and based his orders on a judgment which resulted from his various observations. When he was levelheaded and serene all went well, but let him become possessed of cranky notions, as he did too frequently for the good of the family, and he was sure to get us all into trouble. So far as I was concerned I did not mind his commanding me to enlarge the caliber of my facial arteries and suffuse our composite face with blushes, for blushing is but an accomplishment of modesty. But when he was fearful and got over-anxious and kept us all awake nights and worked us too hard, when he took a moody view of events over which he had no control and distressed the whole family with his lamentations, and especially when he went beyond this and got mad he could do us all more harm in a minute than could be undone in a week. It was a good thing for us that he could boss us around only during waking hours, as he was very erratic, hard headed and inconsiderate. He made mistakes enough for us all and we really never succeeded in being a happy family until all the conceit and self-will to which he was prone was taken out of him by the incidents and accidents of time and he became thoroughly imbued with the only true inspiration of correct living which was embodied in the submissive prayer, "Thy will, not mine, be done." All through the first part of our life he and God seemed to differ and his determination was

evidently "My will, not thine, be done," and it took a good many disappointments and disasters, in which the whole family of us was involved, to teach him the fallacy of attempting to become a law unto himself, and that his business was to obey laws rather than to attempt to make them. Later on in our experience he became more Christian-like, and as he did so we got on better. It was a happy day for us when he surrendered, for we were all at his mercy and the burden of his mistakes always fell upon me especially, or at least so it seemed to me. He would repeatedly call upon me for more activity than I was capable of and got me all out of rhythm until I was many a time more distressed and discouraged than I can possibly tell you. Our family troubles, I am satisfied, all had their beginnings in his mistaken conceptions of life and its purposes; but I have no complaints to offer. He was our elder brother, and without him our existence would not have been possible, and we were all satisfied that his mistakes were those of ignorance, which he was only too glad to correct as soon as he learned better. He knew very well that whatever he had in his head was of supreme importance to us and on all occasions I am satisfied that he did the best by us that he could, and all that I want to say is that as he grew wiser the rest of us invariably grew happier and healthier.

The sympathetic man, who was always on duty day and night from birth to death, was not at all self-conscious or erratic in his management of us. His business was simply to find out what the various members of the family needed and do the best he could in the way of supplying it. He was regular in his habits and tireless in his energy. He sympathized very deeply with the troubles of the cerebro-spinal man, but nevertheless had a mind of his own, which was greatly to our advantage, for without his steadying influence none of us would have had sufficient courage for a single day's work. It was under his masterly management that all our work of building and repair was carried on and the various rhythms of the organs established and maintained. He never slept nor rested, but was always at his post of duty, issuing whatever orders were necessary for the performance of the various bodily functions. We had jolly comfortable times nights, when the cerebro-spinal man was asleep. He was of an uncomplaining nature and did the best he could with the forces at his command, regardless of the incidents and accidents of our human experience. Sometimes our cerebospinal brother would submit to his management and then all would be well with us. But this was not always the case, and when our

cerebro-spinal brother succeeded in disarranging the plans of our sympathetic man there was trouble in store for all of us. But even in such crises of our existence our sympathetic brother stood right by us and did the best he could. The vaso-motor system of nerves which dominated my personal activity would receive some pretty severe orders from the cerebro-spinal man, but when disaster threatened the sympathetic man would modify them so as to make life tolerable and trouble was thus frequently averted and our continued existence made possible. These nervous brothers of mine will each speak for himself after a short time, and so it is unnecessary for me to say more to you now concerning them. My best and dearest and most reliable and helpful companion in all the years of my existence, however, I wish to tell you right now was my sympathetic brother. He was a quiet fellow and was never properly appreciated by doctors or laymen, but his time is coming, if indeed it has not already come, and matters are going to be better than they were, for he knows laws and every human being had better listen to his counsels if he wishes to get on well. Of course our family of forms were all fond of one another, but I can tell you that our sympathetic man is the brother whose voice needs to be heard, and I advise you to give him careful audience when he speaks.

Perhaps you have observed in looking at me that my arteries seldom pursue a straight course, but are more or less tortuous in their appearance. The reason for this was to adapt them for the different positions and conditions of the parts which they supplied. In organs which vary greatly in size and position at different times my arteries were much more tortuous than where but little mobility or change of position was expected. My large arteries always ran out to their destination in as direct a course as possible. In the extremities they wound about so as to lie along the flexor side of the limbs, only such branches as were absolutely necessary being sent off on the side of the extensors. There were no large arteries along the back of my head, neck, trunk or limbs. Of course my capillaries were everywhere, as the nature of their function rendered this necessary. But everywhere in the body my position was always as direct as possible on account of the importance of my mission. The whole family realized my importance and favored me accordingly. All of them would fight for me in a minute if they had to, and I tell vou it scared them all when I suffered violence and the blood which I carried was spilled out or obstructed.

A few of my brothers had tissue so characteristic of them as to

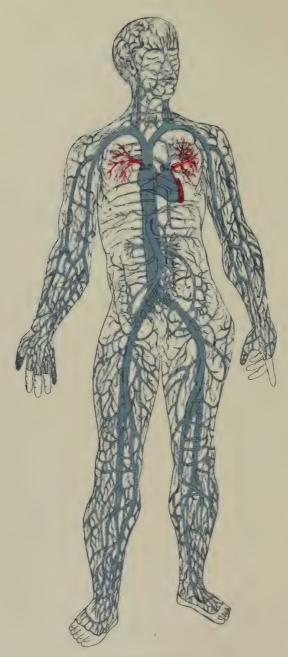
give them a marked individuality. Especially was this the case with my bony, my muscular, and my arcolar brothers. But for myself, I seemed to be constructed entirely from elements borrowed from other members of my family. I was under especial obligations to the arcolar and to the muscular men. The forms of most of the other men were closely entangled in the meshes of my own construction, just as our forms were all more or less closely blended together. But I could retain my shape and personal identity and spare all my brothers except the bony, muscular, arcolar, and skin men. Without these I could not and would not have existed. My sympathetic brother, who, as you will understand from what I have said, was very close to my heart, contributed but little to my shape. The understanding between us, however, was just as close as though his outward form had been a larger part of my own.

Ladies and gentlemen, I feel that I have already severely taxed your patience with my long story, and so will bring my remarks to a close. I have said nothing of how I have suffered in the way of sickness, acute and chronic, but I think you will understand that, like my brothers, I, too, was mortal and consequently subject to all the conditions of mortality, having much to do while I lived with the health and sickness, the growth and repair, of all the human shapes with whom I was associated, and was liable to all their sorrows as well as their joys, to all their diseases as well as their recoveries. I had a few troubles peculiar to myself, but do not deem the present occasion a proper time for their consideration, as my story has already been a long one. So, thanking you for your presence and thoughtful attention, I bid you good day, feeling sure that if you have been interested in my personal history in spite of its incompleteness and other imperfections, you will take a still deeper interest in the impersonations of my brother forms, who are yet to be heard from.

The next shape to speak to you will be my twin brother, the venous man.







THE VENOUS MAN

## IMPERSONATION No. 4.

THE VENOUS MAN.

### LADIES AND GENTLEMEN:

My twin, the arterial man, has requested me to appear before you and tell you something of myself, and so I suppose I must do the best I can to entertain you. Although a good speaker with me for a subject might be able to give you pleasant and profitable entertainment, I have but little confidence in my own ability to make full use of my opportunity. I am just one of the brotherhood of shapes that vou have been hearing about of late, and more of a worker than I am of a speaker. If I could only be put in operation, so that you could get a fair example of the use that I was made to serve in the human body, you would find the demonstration fascinating in the extreme. If my story, then, does not hold your attention it is because it is poorly told, and not from any poverty of material out of which to weave a brief consideration. In other words, I am conscious of being interesting in myself, but have little faith in being able to present my interesting features in an entertaining manner. But if you will allow something for my embarrassment, something for my loneliness and grief and helplessness at being separated from my brother shapes, within whose meshes I was always so closely entwined, something for the fact that I am somber in appearance, have been somber in my life work, and must therefore be more or less somber in my talk, I will briefly refer to a few of my characteristics that seem to me most deserving of your attention.

Although each of the human forms will speak for himself in your presence, and is supposed to confine himself to matters of personal consequence, for myself I shall take the privilege of dropping an occasional remark concerning some of the other members of my family whenever it seems necessary to do so, in order to properly elucidate my theme.

You know I am a twin, and although I am expected to confine my present remarks to personal matters, in my own mind I find it difficult to escape the conscious presence of my twin brother. The fact

of the matter is, we have had very much in common. When the blood of our body was all drawn off we were both of us found to be merely tubular formations. Both of us carried blood, both of us were connected with the heart at one end and with the capillary system of the body at the other; but although so closely associated with each other our functions were quite different, my brother's mission being to carry blood away from the heart out into all the tissues of the body, and my mission being the reverse, to collect the blood from every part of the human system and return it to the heart. Between us we managed the complete circulation of the blood. But he, as I said, distributed it, while I collected it. He spread the table for the nourishment of the human being, while I picked up the crumbs. He brought things, I took them away. He acted as a supply train, while I was more or less of a funeral procession. He dealt in supplies, while I was more of a high-grade scavenger, and gathered up the waste, either for renewal or burial, as proved to be necessary. So you see, while between us we managed the circulation of the blood, in reality we performed uses of an opposite nature.

This was true so far as the greater part of our work was concerned. Down in the chest, however, our duties were reversed. After I collected the blood from all parts of the body and poured it, a foul, polluted stream, into the right auricle of the heart, this cavity contracted and forced it into the right ventricle, and there my service ended so far as my handling of dark blood was concerned. My brother, the arterial man, then took charge of it and had the responsible position of conveying it to the lungs for its purification, after which it was once more passed into my keeping and, by my four pulmonary veins, I had the joyous privilege of emptying it into the left auricle of the heart, after which it was once more placed in my brother's keeping. You see, whenever blood went from the heart, be it red or black, my brother had it in charge, and whenever it was brought toward the heart, regardless of its color, the burden became mine. But my brother and I understood each other so perfectly that we worked in such perfect harmony as in reality to appear like one person, the bloody man, instead of two, as we are represented in your presence. It is perfectly proper, however, that we should be regarded as two separate forms, because there were enough marked points of difference between us to establish separate identities. For instance, in the matter of construction, each of us had three coats. and although there was very little difference between the outer and inner coats which belonged to us, the middle coat, which entered into the formation of the arterial man, was much thicker and more substantial than my own middle coat. So marked was this difference that whenever an artery was severed and the blood emptied away the artery stood wide open, so that the severed end appeared perfectly round. If an artery was pinched its elasticity immediately restored its shape when the pinching ceased. But poor me! I was not so blessed with stiffening material. When I was not distended by the current of blood which coursed through my channels, I became perfectly collapsed, and it would not be necessary to pinch me to hold my walls together. They would stay together of their own weight. Nevertheless I was not devoid of a middle coat, and such as I had was constructed after the manner of that of the arterial man, namely, of involuntary muscular fibers.

Our means of nourishment and nerve supply were identical. Like the arterial man my activities, what few I had, for I was not so active as he, neither was I as strong, were presided over by the vasomotor nerves which, as he has explained to you, were made up of a combination of sympathetic and cerebro-spinal nerve fibers, so that either nervous system could have direct communication with the blood stream. Then, too, neither of us depended upon the blood we handled for our nourishment, but, as he has already explained to you, a delicate system of blood vessels called the vasa-vasorum provided us with what material we needed for our nourishment. In this we were alike.

We were quite different in our containing capacities. It would take twice as much blood to fill my veins as would be required to distend his arteries. That is, my area of channel surface was twice as extensive as his. My branches were more numerous and more irregular in their location. As we handled the same amount of blood you can at once see that he had to accomplish his work twice as rapidly as I did mine. So while the arterial stream was very rapid the venous stream was comparatively sluggish. In general terms I consisted of two sets of veins, both of them, of course, starting at the capillaries and coalescing as they increased in size and decreased in number as they approached the heart. One set of my veins kept company with the trunks of the arteries, the largest-sized arteries having but one vein, while the middle-sized and smaller arteries were furnished with two companion veins, called venæ comites. This set of veins which accompanied the arteries, and were often encased with them in the same enveloping sheath, were known as the deep veins. The other set of veins, called the superficial, ramified in the loose areolar tissue immediately beneath the skin, and when they were filled with blood and the skin was of a clear transparent quality they showed as irregular blue streaks, mapping the surface of the body out into queer, irregular-shaped figures, bounded by the blue lines.

It seemed as though the blood must get lost in the labyrinth of my channels and never succeed in finding its way back to the heart. Such was not the case however as, if there was no mechanical obstruction to prevent, the heart got all of its blood back in due time, and as fast as it emptied itself was filled up again. In some places my venous branches went by the name of sinuses. For instance, the large venous trunk that took the blood from the walls of the heart itself and poured it into the right auricle was called the coronary sinus. The large veins which connected the uterus with the placenta in gestation are known as the uterine sinuses. Those of my veins which were located in the dura mater of the brain—the tough outer membrane which acted as a lining to the cranial cavity—were all called sinuses. There were fifteen of them in all, but their naming is not important on the present occasion, as the fact which I have already stated is all that will probably interest you at present. In a few places, where my veins were very numerous, thick enough indeed to constitute something of a bundle of them. they took the name of plexuses; as for instance, the choroid plexuses, in the lateral ventricles of the brain, the pampiniform plexuses in the spermatic cords of the male and in the broad ligaments of the female. It is a little confusing to students of anatomy that some portions of my tubular structure go by the name of sinuses, for the bony man has cavities connected with the cranial bones that are also called sinuses, as the frontal, ethmoidal, sphenoidal, and maxillary sinuses. To have the same name to mean in one connection a bony cavity, and in another place a blood vessel is a little awkward. is it not? Nevertheless I had nothing to do with the matter and simply relate the facts.

Anatomy is not a very progressive science and does not change much with the years. As what I am telling you is already a matter of ancient history, it is liable to remain unchanged for ages to come. So instead of finding fault with things as they are it will better become us perhaps to simply accept the situation and let that end the matter. It is all right to fret about unsatisfactory arrangements that are capable of modification, but to resent the inevitable and rail against conditions which are permanently fixed is both useless and unsatisfactory.

In another important respect the arterial man and myself were different. He had no valvular arrangement except the semi-lunar valves which served to prevent the regurgitation of the blood back into the ventricles when they relaxed after contraction. But I was furnished with innumerable valves placed a few inches apart in most of my branches, so that when the blood tried to go back toward the capillaries, as it might do under some forms of outside pressure, or induced by gravity acting upon dependent parts, the regurgitation of the blood stream toward the capillaries was thus rendered impossible, for the slightest motion of the blood backward closed these valves and completely obstructed its progress. There was one part of my venous self which was unprovided with these valves, and while there may be some advantages in this fact with which I am not acquainted, I sorely felt their absence and often wished that there had been valves enough to go around, so that all my venous branches could have been provided with them.

I refer to my veins which were connected with the digestive organs. Those of my veins which came from the spleen and stomach and the small intestine and from the large intestine and from the pancreas, indeed, as I said, from all of the digestive organs, coalesced into one large vein known as the portal vein, which carried the blood to the liver and ramified through this organ before it was again collected by the hepatic veins and carried into the inferior vena cava, to be carried with the rest of the blood from the lower part of the body to the right auricle of the heart. All these digestive veins were unprovided with valves. As a human being spends much of his time in an upright position you can readily see that the lower veins connected with these digestive organs, namely, those supplying the rectum, are forced to sustain the pressure of the entire column of the blood which extends from them to the liver. Not only does the force of gravity act upon them, but when the liver was congested or the circulation of the blood through it was in any other manner impeded, the venous stream was thus blockaded and the veins which collect the blood from the rectum were called upon to sustain the entire force of this pressure. You can at once see that here were two obvious reasons for undue stretching of veins which return the blood from the rectum. These veins were called hemorrhoidal veins, and their dilatation constituted the annoying and mischievous trouble known as hemorrhoids, so common an affliction as to be familiar not only to doctors, but to the laity as well. It seemed to me that hemorrhoids could be avoided if all veins which come from the digestive organs were provided with valves. But this is the way I was made, and I presume it was for a valid reason, although I am fully unable to appreciate it, and so in reality have no right to pass such severe judgment upon my construction.

Gravity does affect me, as is evidenced by the fact that varicose conditions of my channels occur in independent parts. The veins of my lower limbs suffered most and frequently became as large as your little finger and stood out like whipcords all over the surface of the limbs just beneath the skin. Sometimes they were distended to such an extent as to rupture beneath the skin and cause spots of ecchymosis, which took a long time to absorb. Oftentimes the skin itself became so congested as to break down and have great big patches of sores, known as varicose ulcerations. When my veins in the pampiniform plexuses of the spermatic cord became enlarged in this way, the condition was known as varicocele and had such a weakening, degenerating effect upon the male sexual system as to call for relief to prevent a complete loss of sexual vigor.

You must not think, however, that gravity was the sole cause of undue dilatation of any of my channels. For if this were the case everybody would have varicose veins, and such, as you know, is not the case. The main factor in any varicosity was a depleted nervous system, concerning which it is not my province to discourse. nervous brothers can tell of their own troubles when it comes their turn to speak. Only you will understand that I held them responsible for whatever pathological difficulties I was forced to encounter. In this sentiment let me assure you all of my brother shapes will also join, for we are all agreed that as our life and health were maintained by the nervous men, so disease in its various types was invariably the product of sins of either omission or commission on the part of these same nervous brothers of ours. Whether they will confess this to you or not remains to be seen, but for one I propose to give you this idea right here, not to escape personal blame, but simply to acknowledge my sole dependence for whatever I am or become upon whatever influence was meted out to me by my nervous associates. We were good friends, my nervous brothers and myself, for we had to be. Nevertheless, while I was their willing servant I was also their unfortunate victim; and I have the courage of my convictions to the extent of proclaiming the truth about the matter in this public manner.

My arterial brother and myself had another point of difference which should be mentioned, and that is that the flow of the blood through his channels was accomplished by waves of pulsation starting from the heart and continued through the arterial channels by peristaltic action. But with me it was different. The stream of blood which passed from the capillaries where I started into my venous channels and finally emptied into the heart, flowed along smoothly and evenly, without wave or pulsation.

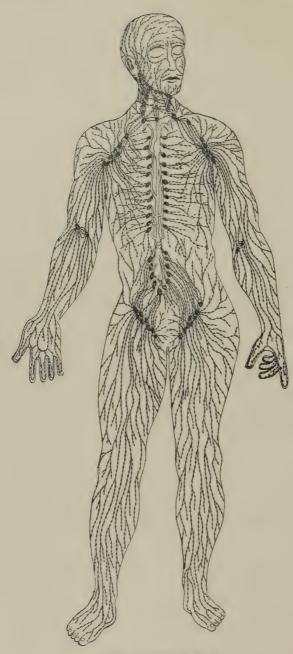
One word more as to the difference in the quality of blood which was carried by the arterial man and myself; while it was his chief occupation to distribute the bright red or arterial blood, and mine to collect from all parts of the body the dark red or venous blood, in our doings with the lungs the quality of our separate burdens was reversed, for after I had poured all my black blood into the right side of the heart I was too tired to do more, and so he helped me out by relieving me of my sorry burden of carrying it into the lungs and to return his kindness, as soon as the blood was rejuvenated and made bright red again I paid him the compliment of conveying it into his keeping in the left side of the heart. That is one way of telling the story; another is that it was his business to conduct all blood, regardless of color, away from the heart, and mine to return it.

At your next assembly the human form who will address you will be the lymphatic man. He will have little enough to say for himself, and I will not anticipate his remarks except to say to you that all the liquid product of his industrious work, be it debris from bodily tissues or the chyle prepared from the food, was poured into my channels at the upper part of the chest, just a short distance before they combined to form the superior vena cava which returned the blood from the upper part of the body into the right auricle of the heart. What a mixture this made of the dark waters of flickering life that had their meeting in the right auricle of the heart. Here was the dishwater of the tissues; the old worn out, disintegrated and dissolved bodily products mingling their liquid death and discouragement with the new material coming directly from the digestive tract laden with the hopes of tissues yet unborn. The surging stream whirled into the right ventricle and was no longer in my keeping. But my arterial brother coming to my rescue turned with a powerful grasp the current, black with the liquid tissues from which all life has been squeezed and impregnated with the incipient hopes of life hurrying to fleshly embodiments, to the lungs for that wonderful breath of life which typifies resurrection to such an extent that it transformed death into life, black blood into bright red blood, stale, profitless, poisonous stuff into a vitalizing fluid for which the bodily tissues forever stood in wait. In return for my arterial brother's kindness in taking this black, polluted stream to its final destination in the

lungs, a service easily conceived to be beneath his dignity, I stood with open veinlets to collect this bright red stream into which had so marvelously been breathed the breath of life, and by my pulmonary veins conveyed it to the left auricle of the heart, from which it was at once returned to the keeping of my arterial brother, who distributed it throughout the human being, giving each manly form the exact amount needed for his sustenance and repair. When we were at our regular business, with the exception of our thoracic interchange of offices, my arterial brother and myself were great contrasts. He was fair and I was swarthy. He was full of life and force and vivacity and strength, and I was weak and discouraged and sluggish and flabby. While we were alike in shape, alike invisible to the naked eye at the capillaries, so that our outlines were equally indefinite, the contrast between us was so great that in spite of our close association there was little danger of mistaking one of us for the other. If he was day I was night, if he was life I was death, if he was substance I was shadow, if he was fire I was ashes, if he supplied I buried, if he sang I sighed, if he smiled I cried, if he was hope I was despair, if he was young I was old, if he was an orchard I was a graveyard, if he was a picture I was but its background, if he was the flow of life I was its ebb, if he was the river of life I was the river Styx. We symboled the extremes of the pendulum of life, we pictured the perpetual ebb and flow and stood for the eternal circle of things, thus forever revolving from life to death and from death to life. I loved my brother. He was my hope. Yes, I should say our hope, for all of us depended upon him. I knew that my brother loved me; and yet in my despondency I sometimes feared that his sentiment toward me must have been more akin to pity than to love. But we both had our uses.

I have told my tale in my poor inadequate manner, and your kind attention has touched me deeply. It assures me that my imperfect presentation of the position I occupied in the brotherhood of human shapes has not entirely hindered you from catching the spirit of the personal history which I have been trying to present to you. My work in the body was somber, responsible, full of discouragement and serious. But I was the only black sheep in the family, and the others of my brother shapes will furnish you with a livelier entertainment. The next in order to appear before you will be the lymphatic man. You must not expect too much of him, for he is bashful and diffident in his ways and will probably have less to say for himself than most of the other members of our composite family.





THE LYMPHATIC MAN.

## IMPERSONATION No. 5.

#### THE LYMPHATIC MAN.

## LADIES AND GENTLEMEN:

Some of our family of human forms are quite widely known, probably because they have had their pictures taken so many times that almost everybody has had an opportunity of seeing their shapes. This is certainly true of our bony brother, for pictures of the human skeleton are widely scattered, appearing not only in all illustrated anatomies, but in anatomical charts, medical periodicals, and frequently even in the popular press, so that every man, woman and child in every civilized country has had ample opportunity to familiarize himself with the appearance of the bony man. Pictures of the muscular man are also pretty thoroughly circulated, and probably every well-read person knows that the muscular structures of the human being when adjusted in their accustomed relations to each other assume the human shape which is known among our immediate family as the muscular man. The two bloody men, the arterial and venous, make such pretty pictures when they sit for their photographs that they are not to be left out when the popular members of our family are being mentioned.

But I will not ask you if you have ever heard of the lymphatic man, for I am well aware of my limited reputation as a human shape, and consequently would expect a negative reply, and so I will save you the trouble of telling me that my existence is not widely known, but will proceed at once to let you know that there is such a fellow as the lymphatic man, and that his proportions are identical with those of his brother shapes and his duties are of sufficient importance to entitle him to a recognition as one of the human shapes whose congregation constitutes the composite being known as man. Look at me, if you please, and behold the lymphatic man.

Well, in the first place I rank as one of the most perfect in our family of shapes. Please do not consider this a conceited statement. It is a mere matter of fact. I do not think that we have any more right to underestimate ourselves and our friends than we have to

overestimate them, and the truth is always the truth with reference to ourselves, whether we relate it or some one else does, and the fact concerning myself is just as I have stated. The distribution of my peculiar structures is so universal throughout the entire body that if all the other bodily shapes were melted away from me and I was left entirely alone the human shape which I would still assume would be one of the most perfect in our whole family. Of course if every bit of the vascular, nervous and connective tissue men were completely separated from me down to their last fibre my identity would be completely destroyed. But grant me enough of my brotherly tissues to establish my identity and then gaze at my shape. There is not an organ or tissue of the body that I do not permeate, and my tissue distribution is so exceedingly fine that it can only be detected by the aid of the microscope. This same fact is true of several of our family. My bloody brothers have already mentioned it as true of themselves, and when my nervous associates speak to you, and the areolar man has his say, these also will call attention to the same fact as characterizing their make-up. That makes quite a band of us, you see, who present a hazy outline, the coarser part of our structures being observed by the naked eye, but our finer parts passing into such obscurity as to be unseen unless considerably magnified by glasses.

Honest confession they say is good for the soul, and the reason why I say so much about my shape is because, I suppose, of my vanity. It is so perfect that I am really quite proud of it. There is no bodily territory of the entire composite man in which I do not take so extensive a part as to make the lymphatic man as shapely as the form of the entire individual will admit.

In my structure I resemble my arterial brother. That is, I am tubular, and my tubes have three coats, an inner or epithelial coat called the tunica intima, a middle or muscular, composed of layers of involuntary muscular fibres just like his, and the outer or areolar coat, called the tunica adventitia. Altogether his walls are much thicker than mine, but he need not be at all stuck up about it, for mine are more delicate than his, and it is quality that counts in this world more than quantity. So although feebler in structure than the arterial man, and even than the venous man, I have reason to be just as proud of my make-up as they are. I am more delicate and refined, that is all. My occupation may be a little more menial in the estimation of some people, but I find that it makes little difference what we do in this world, it is what we are that counts. So I am banking on my quality rather than on my occupation. Life is short anyway,

and I have no complaint to enter against the bodily task assigned me, my chief care being what I am and how well I do my work, and you can take it for granted that I would not be entitled to mention in the list of bodily shapes,—that is my tissues would not be universally distributed throughout the body, if I was not at least of some consequence in the make-up of our family.

As to my terminal tendrils, I am somewhat closely associated with the capillaries which connect the venous and arterial men, while at my central trunks, which are two, the right and left lymphatic ducts, the latter being known as the thoracic duct, I terminate in the large veins near the heart. I have no right to complain if I am considered as belonging to the great venous man, but in his remarks before you he was kind enough by ignoring me to admit my right to a personal identity, and so I have taken advantage of his generosity by putting in a claim right here to my individuality and posing as a separate and distinct human shape.

I suppose you want to know of my source, of my destination, and of my function. I have already told you something of my structure but not quite all, and let me say a little more about that first.

You will remember that the venous man boasted of the possession of occasional valves along his canals to prevent the regurgitation of blood, backward toward the capillaries. In this respect I am his superior. I not only have valves along my channels, but they are so thickly placed in every one of my branches that my outline is not straight like the venous man, but extremely knotted, having the appearance indeed of a string of very fine beads. The constricted points mark the location of my valves. You see the lymph which flows along my channels passes but one way, viz., toward the center of circulation, the heart, and it goes so slowly and is dependent to such an extent upon the vis a tergo furnished by muscular action that my innumerable valves are necessary to prevent excessive regurgitation of my liquid contents toward the tissues. Although I may appear, as I have said, to be composed of rather small tubes, there is another part of my structure which is so peculiar to myself that you will not find anything like it associated with any other human shape. I have reference to what is known as the lymphatic glands. If I am considered a system of small sewers for the body simply because I collect the dish-water of the tissues after they have all been bathed in the lymph which I carry, these glands would probably be considered as catch basins. If my tubes rank in your estimation, however, as drainage canals, depleting the tissues of their wash water, you may

think of these glands as locks along the course of my channels, at which the flow of lymph must stop and be filtered on its way to the venous blood stream.

My glands are located in protected situations. You will find them in the bends of the elbows, the arm pits, the popliteal spaces, the groins, thickly scattered throughout the anterior part of the neck, that is, the part in front of the cervical vertebræ, and in the abdomen between the folds of the mesentery which suspends the small intestine to the backbone, and in the chest between the lungs, the space being known as the mediastinum.

The structure of my glands is too complicated to be presented to you in exhaustive detail on the present occasion, for my purpose in speaking to you, as I understand it, is to give you a general conception of myself rather than to entertain you with minute details which would confuse rather than interest you. You ought to know this much, however, that every one of my lymphatic vessels passes through one or more of these glands on its way to its destination in the veins. I ought perhaps to say that every one of my glands has an enveloping sheath consisting of areolar tissue, in which are distributed a number of involuntary muscular fibres, so that when they are congested from over use the elasticity of their coats aids in milking their contents onward toward the blood stream. I shall have to claim for my glands, however, a little more distinction than that of being mere catch basins or locks in the lymphatic canals. Perhaps vou have heard somewhere of the minute blood elements known as white blood corpuscles. As bacteria are the lowest type of vegetable life, so these white blood corpuscles may be considered as the lowest type of animal life. At any rate they are important agents in the construction and preservation of the human tissues. They are otherwise known as leucocytes, and it is my office to introduce them to you as lymph cells. They are the only cells in the body that possess no cell wall. They move about very much like a jelly fish in water, that is by what is known as an amœboid movement, by means of which they escape from the capillaries into the tissues, wander into my channels, and are carried on to my lymphatic glands. The fact that more of these lymph cells leave the glands than enter them proves conclusively that my glands are factories for their formation. The red marrow of the cancellous tissue of bones is said to give rise to them, they are born also in the spleen, and perhaps in the thyroid, and perhaps up to the seventh year of life in the thymus gland, but there is probably no more prolific source of their supply than my own lymphatic glands. You see this gives more dignity to my position in the body, as to be a manufacturer of an important bodily constituent is a much more honorable position in the human economy than to rank merely as a set of sewers or drainage canals. My glands are liable to be sickly, owing to the poisonous nature of the lymph which filters through them. They frequently become inflamed from the passage of infected lymph and break down into abscesses, and many times they become tubercular and have to be removed to prevent the spread of tuberculosis, and sometimes of cancer, to other parts of the body. You must remember that all the contents of my entire system is poured into the stream of venous blood which goes back to the heart, which is sent first to the lungs and afterward again to the heart, and then propelled by the agency of the arterial man to every part of the human body, thus rendering it important that this blood stream should be wholesome and nutritious, and when my glands become so badly infected that they are liable to poison the lymph which runs from them their extermination becomes a matter of great surgical importance. Of course some of them are inaccessible, like those in the abdomen and thorax, but those in the popliteal space, the elbow, and in the axilla and groin and along the front of the neck, can be taken away at the discretion of the surgeon.

This has been rather a long parenthesis, but has seemed necessary to a proper conception of my make-up. I will now speak briefly of the three points in which perhaps you are more directly interested, namely, where I begin, where I end, and what is my function.

First, then, of my source. Well, my radicals are everywhere. There is no tissue in the body in which they do not start, sometimes in the shape of capillary loops, sometimes in well rounded, sometimes in dilated extremities, but more frequently in what is known as the areolar spaces. To understand what I mean by areolar spaces you must wait until my kindred shape, the areolar or connective tissue man, talks to you. For the present it will suffice to say that the entire body is more or less porous, like a sponge, in the meshes of which the cell elements of different kinds, of which the entire body consists, are more or less entangled and in which they are variously arranged according to the organ which they are destined to construct. Well, these fine pores which are found in every type of bodily structure open directly into my canals, so that anything which they contain has open access to my tubes. Of course solid substances must be in solution to enter my domain, but with this provision I am capable of acting as a drainage canal for every part of the body. The

liquid which I thus collect is known as lymph, and because it is my function to collect this lymph from the entire bodily domain I have received the name which I bear and am known as the lymphatic man. In the abdominal cavity I do more than this, but I will speak of that later on. There is another manner in which my radicals have their beginning which should not be lost sight of, and that is by little mouths or openings called stomata. If you examine any of the serous cavities, such as the joints, large or small, the arachnoid membrane about the brain and spinal cord, either of the pleuræ, the pericardium, or the great peritoneal cavity, it matters not which, you will find on the smooth shining surface of any of these cavities minute slits or openings. These are the stomata or mouths of which I am speaking. They are gateways which lead directly into my little canals, so that as a matter of fact all serous cavities both large and small are nothing but magnified lymph sacs, by means of which serous fluid can be drained away when too excessive and carried directly into the blood stream. When an excess of fluid does not thus escape it is because some process of inflammation has sealed these mouths for the time being and thus closed the stomata, which in a normal state serve as an avenue of exit for all excess of fluid in serous cavities. I suppose that when inflammation attacks the human body in any of its types my position in the family of human shapes is perhaps a more responsible one than that of any other, for all poisonous liquids pass at once into my channels, and if I can not by means of my lymph corpuscles and other sources of defense antidote the poison it passes from my keeping and by means of the blood is distributed to other parts of the body, which then become sufferers with myself.

As to my destination, there is little to say concerning it. The lymph which I collect from the right arm and right side of the head after it has been passed through the lymphatic glands situated along the course of such of my vessels as drain these parts, is carried into the lymph channels, which increase in size as they coalesce, until finally one large trunk about an inch and a half in length and called the right lymphatic duct, receives the entire quantity of lymph from these parts and pours it into the right subclavian vein, or into the outer end of the right innominate vein, right where it starts at the junction of the right subclavian and internal jugular veins. As the stream of lymph has now entered the blood stream, of course you know its destination, as you have already listened to the remarks of the venous man.

My left lymphatic duct is more pretentious and is known as the

thoracic duct because it passes from the abdomen, where it starts opposite the second or third lumbar vertebra entirely through the thoracic region, and terminates in the left subclavian vein near its confluence with the left jugular vein, these two streams uniting at this point in the left innominate vein. My left lymphatic, or so-called thoracic duct, receives the contents of the lymphatic vessels from every part of the body not drained by the right lymphatic duct. That is, it drains the left side of the head and neck, the left arm, the lower extremities, the abdomen, and the thorax itself.

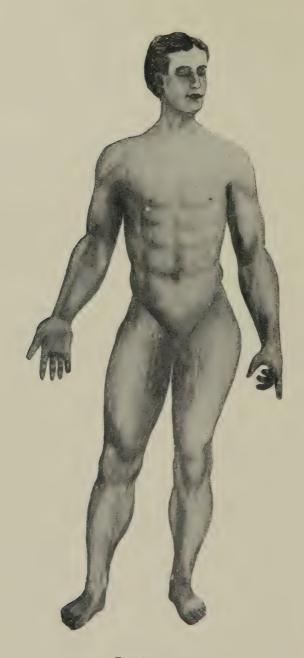
Now as to my function. It is three-fold. I collect lymph from the tissues, chyle from the intestines after it has been manufactured in the process of digestion, and by means of my lymphatic glands manufacture lymph cells, which are identical with the white blood corpuscles. You see my lymph in the first place escapes from the capillaries in every part of the body out into the porous tissues which surround them, thus putting the whole body to soak as it were in a liquid which serves as their soup or nutriment and at the same time as their wash water or sewage. Some of this liquid undoubtedly gets back into the veinlets and passes directly to the heart. But a considerable portion of it, after the maceration of the tissues in the liquid of life, which would not be a bad name for it by the way, is collected by my innumerable radicals and is milked along my channels by the action of surrounding muscles and by the fine muscular coat of my own tubes until either by the right or left lymphatic duct it is carried back to the great river of life, whose complete and continuous circulation is so essential to bodily growth and repair. You know how a foul stream will pollute a clear one into which it empties. To be sure the venous blood returning from all the tissues of the body except the lungs is dark red or purple because it has parted with the oxygen with which the arterial blood is charged. But its pollution is not complete until the tissue-washed lymph which it is my office to carry is poured back into the veins at the upper part of the chest. To be sure I bring the chyle from the great table of life, the intestinal tract, and it is full of good cheer and strength and nourishment and hope and longer life for the hungry tissues after it has received the breath of life in the lungs, but this is but a small ingredient to counterbalance the great mass of dissolved tissue debris that finds its way by my operation into the venous channels. The blood stream may have been dark before the sewage which I carry was emptied into it, but afterward it was not only dark but polluted more or less thoroughly, according to

the quality of the tissue disintegration that I have been asked to return to the circulatory centers. Every day I rejoice that our family of shapes is provided with lungs for the purification of the blood, and every night I have prayed that these delicate organs may be equal to their important task. When I think of what they have to endure in the way of resurrecting old, decrepit, worn-out blood cells, giving new ones recently born their first breath of life, and disinfecting the impurities of the blood current as they have accumulated from all the innumerable communities of the organs, I feel as though our composite of human forms cannot appreciate too keenly the kind offices of the lungs or do too much in the way of conscientiously performing each his separate task in order to lighten as far as possible the burdens of these all important twin organs, the human lungs.

Ladies and gentlemen, I thank you for your kind attention and sincerely hope that my remarks have persuaded you that the lymphatic man deserves to be considered as a worthy member of the common family of human forms, whose separate individualities are presenting themselves for your inspection in their proper order.

The next human shape to address you will be the member of our family known among ourselves as the skin man.





THE SKIN MAN.

# IMPERSONATION No. 6.

THE SKIN MAN.

## LADIES AND GENTLEMEN:

Here I am, as announced, to ask your attention while I tell you something of myself and my relations with my brother shapes.

I am smooth on the outside, because the liquid has evaporated from my outer cells and left them dried up. I am ragged on the inside, because my deeper layers are continuous with the areolar tissue which penetrates to the most remost parts of our brotherhood. I am tough, because of the fibrous tissue out of which a large part of my structures is woven. I am elastic and can stretch or contract as needed owing to the fact that my texture is more or less porous and therefore capable of acting as a closely fitting garment to the human organization which I was constructed to cover in whatever proportions it may assume. I become delicate and sensitive if coddled and pampered, but get tough as a newsboy when roughing it under exposure. The venous and arterial men furnish me with all the blood that I need, the sympathetic man and the lymphatic man have been taxed for my benefit, while the cerebro-spinal man has honored me with such an ample supply of nerve terminals as to set me up as the organ of touch for the entire body. In exposed places I am thick, as in the palms of the hands and the soles of the feet. And I can also create to order under the stimulus of intermittent pressure special areas of thickened tissues, as everybody knows who has suffered from corns and callouses and can testify if they are willing to give themselves away. Leaning on the elbows, or sitting or kneeling also thickens me at the places where the pressure comes. I have to pad myself in these localities. I am glad to thicken at my knees, for much good seems to come to me from it, but I cannot say as much for other localities. I am thin in protected places, as on the flexion side of the joints and the inner sides of my limbs. In a few places I contain involuntary muscular fibres, giving me erectile qualities enjoyed by but few of the bodily organs. In warmth I am relaxed and more or less porous, but when acted upon by cold I can hug my meshes together so tightly as to take on the appearance known as goose flesh. In shape you will easily recognize that I am a very perfect human form, and if I ever belonged to one of your friends I would not be able to conceal the fact from you.

But do not mistake me for the whole human being, as I am nothing but his cage. The bird himself has flown. I look substantial, but I am hollow. To you whose gaze is only skin deep I may appear all right, but percuss me anywhere and just hear me ring. If I was stiff enough I would make a fine drum. Then you could secure from me with a pair of drumsticks almost any pitch you wanted, according to the depth of the underlying hollowness. You would get low ones from my trunk and head, higher ones from my arms, and still higher ones from my fingers and toes. If you should cut a hole in me anywhere and peek in you would at once perceive that my brother shapes had all left me alone and that I was a vacant chamber, completely hollow in every part, and black as night inside, because no light can enter my pores except through the hole which you yourself made. It seems as though I have limbs and head and trunk, but don't deceive yourselves; I am in reality very unsubstantial, for my brother, the bony man, no longer sustains me, and the muscular and other brothers constructed of gentler stuff have taken themselves away and furnish me with padding no more. In reality I am nothing but a mere wrapping of the substantial shapes which I used to contain.

When our family was all together and our household was in good working order my position seemed to me so important that I was impressed with a deep sense of responsibility. At that time I held the entire family within my embrace. I was their swaddling and grave clothes, and was at all times essential not only to their protection but their service in many other respects, to which I will refer in a short time. More than my brothers, perhaps, I am most emphatically a child of time. Let me explain this a little more at length. If there is ever one thing that is characteristic of this transitory physical world it is the outward forms of things. This whole physical world of ours indeed could very properly be dubbed a skin world, for some type of skin or covering is absolutely necessary to all physical shaping. In the vegetable kingdom the skin is called the bark. In the mineral kingdom, although you may think the illustration is rather far-fetched, the entire substance in every case is but an outer vessel to receive, become saturated with and

retain the indwelling vitality known as magnetism, without which the molecules of which minerals are made could not be held together. I wonder if this molecular contraction or magnetism is not what is known in physical science as gravity. The animal kingdom, without exception, is invariably skin covered. And this is true not only of each entire animal but of every part of the animal. Even the minute cells or smallest particles into which animal tissue can be divided have their cell walls or skins, without which they could never assume physical shape, and here I am claiming identity with the connective tissue man, but while I include him, he by no means includes me. Wine and water and other liquids are no more dependent upon the bottles, casks, cans or other vessels that hold them than is the human family dependent for its very existence upon the human skin. The skin is the baby's swaddling clothes, and as he grows the skin stretches and still incloses him. When at last he shrinks and shrivels the skin contracts and wrinkles upon his receding form, thus always acting as a closely fitting garment.

I was always proud to have my brother shapes in my continuous grasp, feeling that only through me could they be held together for the purposes of their existence.

You have perhaps heard the story of the man in one of our western cities who had discovered a universal solvent for all physical substances. It would dissolve iron, or steel, or stone, or glass, or wood, or rubber, or any other material whatsoever. His road to fame met with a single obstruction, but that was a fatal one. Owing to its wonderful solvent powers he could find no material out of which to construct a receiving vessel, and so his wonderful solvent became dissipated and his discovery was valueless. This story is a fine fable, for it illustrates a universal truth, that nothing can exist in this world without being confined by some containing structure. That confining material, whatever form it may assume, may naturally be considered as its skin. Hence it strikes me as not at all improper to call the entire physical world the skin or shell of the unseen world which dwells within, and which by perpetually playing upon it is constantly producing changes in the skin type. In this same way my brothers could not exist and sustain their shape without my assistance. A cell wall is really a skin, whether it be of the muscular, nervous, or other tissue. And all my brother shapes are mere aggregations of cells of various kinds. Such small skins as these are comparatively insignificant when compared to myself.

I am the skin of skins, and common, simply constructed skins, whose sole office appears to be to serve as a box or containing vessel, are not in the same class as myself. As these smaller skins protect their contents, so of course I protect the body from harm. But aside from this fact there is no further resemblance.

I am perfectly willing that less important coverings of small and apparently unimportant structures should be called skins if it is only understood that I am the skin. These smaller skins, by the way, have various names according to their locality, which will be given you by the connective tissue man, who will be the next one of our family to entertain you. In giving an account of myself it may be well to proceed in an orderly manner and tell you first the main features of my structure, and then speak of my various functions.

I presume that most of you at some time in your lives have either from unwonted pressure or some form of irritant experienced what is commonly known as a blister. Perhaps you think that when the blister is broken and its covering taken off that the skin has been removed, but in such case you do me a great injustice. What has been taken away is nothing but my outer layer, which is known as cuticle or scarf skin. The true skin still remains unharmed, and if permitted to do so will reproduce the scarf skin again as good as ever. So you see I consist of two layers, the cuticle, to which I have just referred, and the cutis vera, or true skin or derma, as I am universally called, which it requires more than a mere blister to injure or destroy. There are no blood vessels in my cuticle, and hence a blister can be raised and the scarf skin separated without the blister being reddened by blood. But the deeper layers of my cuticle are penetrated by nerve fibers, rendering the blistering process not altogether a comfortable one. After the scarf skin has been raised by a blister, of course the nerves which pass into the deeper layers of the cuticle are all separated, and it causes no pain to lift the covering of the blister. But any measure which tears my cuticle from my true skin causes more or less pain in the process. My scarf skin deserves more than a passing notice, and indeed I will not be able to do it full justice on the present occasion, for it is not so simple a structure as you might think. The outer surface of my cuticle or scarf skin is hard and horny because the liquid contents of the cells which compose it have evaporated and rendered me a little scaly on the surface. These outer cells or scales are constantly being shed, their places being taken by those which are constantly growing up from beneath. In this way is my

scarf skin being constantly renewed from beneath. The inner surface of the scarf skin is softer in texture and fits tightly over the irregular surface of my true skin. As this latter is always more or less roughened by papillary projections upon its surface, the entire under surface of my scarf skin is bespattered with small holes or depressions for their reception, and owing to this fact has received the name of rete mucosum. Between the rete mucosum and my outer surface my scarf skin consists of various layers of cells which change their shapes from within outward according to the degree in which their contents have been evaporated by contact with the outer air.

The coloring matter in the dark races is deposited in this deep laver of the scarf skin known, as I have just mentioned to you, as the rete mucosum, so that if the cuticle of a colored man be stripped off he will be found to be just as white as anybody else, but he will not be white at all upon the surface, but red. My true skin is so vascular that in a normal condition it takes on a decidedly red appearance. My scarf skin, aside from serving as the recipient of the coloring matter in the dark races, is useful mainly for purposes of protection to my more delicate and underlying cutis vera. It prevents the undue entrance and exit of both heat and cold and the too rapid evaporation of liquids. My cutis vera, derma or true skin, however, is more highly organized, and you will find its structure an interesting study. Its outer surface, which is covered closely by the cuticle, presents a multitude of small elevations known as papillæ, which project from the surface of the true skin like warts on a toad's back. So important are these papillæ that the thin layer of the derma which presents them is known as the papillary layer. Sometimes these papillæ are arranged in rows, with little grooves between them. This is especially true of the palms of the hands and soles of the feet, and palmists who have studied the arrangement of these ridges and curls on the palms of the hands closely, will tell you that they constitute the veritable parchment upon which the story of the life, past, present, and future can be told in general terms. Each papilla contains a little capillary loop of blood vessels and lymphatics, and small terminal nerve filaments as well. Some of these nerve filaments terminate in an enlargement known as the tactile corpuscles, in which is said to be located the sense of touch. Papillæ exist over the entire surface of the cutis vera in all parts of the body, but in the palms of the hands and soles of the feet they are biggest and most orderly in their arrangement. The papillary layer of my true

skin is not deep, and passes imperceptibly into the deeper layer of my true skin, which is known as the corium. This corium is a bed of fibrous tissue in which several important structures lie closely nested. It contains sweat glands, sebaceous glands, hair follicles, and involuntary muscular fibers, its deeper part being characterized by layers of areolar tissue in which is entangled adipose tissue. Sweat glands are little tubes of uniform caliber, arranged in the form of a coil in the deep layer of my corium, one end of which is a blind pouch, which lies in the center of the coil, and the other end of which passes up through the corium between the papillæ and through the cuticle opening upon the outer surface of my skin. While it remains in the true skin the sweat gland is a well organized tube, having an epithelial lining and a muscular coat of involuntary muscular fibers, and an areolar coat as well; but as it passes up through the cuticle, it loses all its coats, so that its channel through the cuticle is rather a space between the cells of which the cuticle consists, than a tube proper. My sweat glands are scattered thickly over the entire surface of my body, but are thickest in the palms of my hands and the soles of my feet, in this connection opening in various places between rows of papillæ.

All over the surface of my body are found innumerable hairs. The small, tiny hairs do not extend deeply into the skin, but the coarser specimens of hair penetrate deeply into the corium, sometimes extending beyond it into the subjacent tissues. In all cases, whether the hairs be fine or coarse, superficial or deep, they are enclosed in a tubular bag known as the hair sheath, from the bottom of which projects a papilla upon which the hair rests, so that in reality they are nothing but a form of the scarf skin. If you should examine one of my hairs carefully with a microscope, you would see that it consists, not of one continuous cell, but of a number of flattened and elongated cells, shingled over each other in such a manner as to render the hair smooth from its root toward its outer end. In testing the cutting edge of a knife or razor, always seize a hair by the root after it is pulled out, and apply the knife close to the thumb and finger that holds the hair. It takes a sharp instrument to sever a hair held in this manner. If the hair be held by its outer end, however, a comparatively dull blade can sever it by catching the free ends of the imbricating cells of which it consists. On the scalp the hair follicles are especially deep, and pass clear through the corium, and are found imbedded in the aponeurosis of the occipital frontalis muscle, so that if you attempt to remove the skin from the scalp without injuring the aponeurosis, you will find it necessary to cut the roots of hairs all the way. I know of some scalps that I am sure would prove an exception to this rule, but they are mere cases of baldness, and do not count. It is not necessary to call names, because they are quite common.

You will find in my corium also what is known as sebaceous glands, which are not straight tubes like the sweat glands, but have branches extending out in different directions from the central tube or pipe, which opens invariably into the hair follicle. There are usually two or more sebaceous glands connected with each hair follicle. Their form of structure is similar to that of the salivary glands and the pancreas, all of which belong to the type known as racemose glands. Like the sweat glands, they have an epithelial lining, an areolar coat, and a muscular coat constructed of the involuntary muscular fibers, so arranged as to squeeze the contents of the sebaceous glands out into the hair follicle, thus furnishing oil for the hair and the surface of the skin.

The adipose tissue which my corium contains will not be mentioned, as it belongs more properly to the areolar man to speak of.

From this description you will at once perceive that there is no particular structure peculiar to myself. My blood vessels, my nerves, my cells, are similar to those found elsewhere in the body. All that gives me my individuality is the peculiar combination which I have formed by obtaining contributions from some of my brother shapes. So that, although I am essential to their existence, they are also essential to my existence. Without the blood I could not be built up, without the lymphatics and veins my debris could not be removed, without the nerves I would be without sensation, without muscular fibers I could not make a single hair stand on end or raise a goose pimple, and without areolar tissue I could have no substantial ground work for my structure, and without epithelial cells I would be incomplete and inefficient. So let me here pay proper respect to the other members of my family, humbly acknowledging my dependence upon their kindness, courtesy and generosity. My independence is but seeming, and although I am proud, I am honest as well, and acknowledge my dependency upon my fellow shapes at the instance of a wholesome conscience.

Before closing my remarks I must speak briefly of my various functions. One of them I have already referred to, that of protection. My family would find this world too rough to live in if I did

not hug them closely and shield them from the weather. It is mainly through my instrumentality that the temperature of the body can be maintained steadily at its normal degree. If internal fires are lighted so that our tissues are consuming too rapidly, by means of my sweat glands, I can produce evaporation and call the conflagration off. By means of my cuticle I can keep out extremes of heat and cold and can also by this same protection prevent undue attrition between my delicate brothers and the outer world. My sweat glands also deserve honorable mention as excrementitious organs. They can eliminate urea, and thus supplement the kidneys in their important function. My sweat glands and the kidneys are to a considerable extent supplementary organs. Perhaps you will notice that when you sweat a great deal, as in warm weather, there is not as much urine formed, regardless of the amount of water which you drink, but in colder weather, when the pores of my skin are more nearly closed, the quantity of urine expelled from the body is correspondingly increased. Through my lymphatics, which are distributed throughout my corium and papillary laver, I can absorb food and oxygen, and thus supplement the work of both the digestive organs and the lungs. Perhaps you know that if you feed a child or sensitive grown person with excessive quantities of beef tea it will produce a dryness of the mouth, especially of the tongue. If fomentations of beef tea be applied over large skin areas, the same dryness of the mouth and tongue will be set up, showing my intimate association with the digestive organs. If you want further proof of the intimate relationship between myself and the organs of digestion, when I become afflicted as I sometimes do with eczema, by means of benzoinated oxide of zinc or other ointment applied to my surface cause this to disappear without giving anything to correct the condition of the blood, and watch the effect upon the stomach and bowels. Many a case of dyspepsia or constipation or diarrhea has been thus induced, to be immediately relieved as soon as the eczema is again brought out upon the surface of the skin. Perhaps you have thought that the lungs were the sole means by which oxidation of the blood was accomplished. If so you have done me an injustice, for I have some small capacity in that direction myself. On this account let me remind you that vou ought to change your clothing as often as possible if you want me to do you good service. How can your hands or feet or the rest of your skin breathe if you do not let them repeatedly come in contact with the fresh air? When you get tired from your

work at night, try the effect of laying off every garment you have on and putting on fresh ones, and see if it does not rest you. Let the fact that it permits increased oxidation of the blood by way of the skin, with a corresponding escape of carbonic acid gas, serve as an explanation, for it will be in conformance with what is really the case.

In the face and in the pelvic region you will observe a number of holes through my structure which lead to interior passages which ramify throughout the entire body. Through these holes my skin passes, and after it gets inside of the openings, is thereafter known as mucous membrane. Tracts of mucous membrane run to the lungs, down into the stomach and intestines, out into the salivary glands, pancreas, liver, and the small and large intestines. They line also the entire urinary tract, including the kidneys, and also ramify through the sexual organs. But this interesting part of my structure, which may properly be called my internal skin, although it is usually known by the title of mucous membrane, is too extensive a subject to be discussed on the present occasion. Suffice it to say for the present that my outer and inner skins are identical in structure, continuous with each other at the upper and lower openings of the body, and present different appearances simply owing to their different situations in life. My outer skin is adapted for contact with the outer world, my inner skin or mucous membrane is fitted for home service. But we are closely associated, not only in structure, but by such close ties of relationship as to be mutually interested in each other's welfare, often bearing each other's burdens and in every possible way supplementing each other in our daily tasks.

Over the entire surface of the body my surface is smooth and continuous, except at its base, where I present a raphe or seaming, as if at this place I had been stitched together. From this brief consideration of my structure and functions you will perceive just cause for my consequential bearing. My brother shapes in most cases have single duties which they are specially qualified to perform. But with me it is different. My duties are various. I am the body's outer defense, and have much to do with the regulating of its temperature; I secrete from my sebaceous glands, and I excrete from my sweat glands; I can be put to a limited extent to purposes of digestion, respiration and elimination, and altogether I consider myself the best all-round member of our family of human forms. Although I feel that I have done myself but poor justice

owing to my poor command of language, I have at least accomplished a worthy purpose if I have served you a pleasant entertainment, and let me hope in some small degree, instruction as well.

My connective tissue brother will be the next of our family to invite your attention, and if he rises properly to the occasion will be found worth listening to, for we consider him a most important member of our composite structure. In closing I perhaps owe an apology for not speaking more particularly of my special function, the sense of touch, with which I have been endowed. But as this is but a part of the cerebro-spinal man, I shall ask him to make up for 'my deficiency.





THE CONNECTIVE TISSUE MAN.

## IMPERSONATION No. 7.

THE CONNECTIVE TISSUE MAN.

## LADIES AND GENTLEMEN:

Agreeable to the announcement of the skin man I am here for your entertainment on the present occasion.

In arranging a concert program you know it is customary to appoint the star performers for the intermediate and closing numbers, beginning the entertainment with the less pretentious performers, thus working the entertainment of the evening to a climax to render it more effective.

Well, whoever arranged the order of our speaking has given me one of the positions of honor, which I was at first a little modest about accepting. But in our family of forms we are all stars of the first magnitude and there are no greater or smaller among us, for each one is essential to the existence of every other, and so we consider ourselves upon equal footing so far as being essential to the make-up of the composite man is concerned.

In every large family it is quite common for the various members to divide themselves into small groups of two or more for the sake of close companionship and personal sympathy. For although brotherly love is supposed to be a common family tie, nevertheless natural affinities will assert themselves and each one will have his particular favorite or favorites in every family circle. Our family of human shapes is no exception to this rule. For instance, the bony man and the muscular man are almost always to be found in each other's company. The venous man and the arterial man are equally good friends, while the lymphatic man is so close and constant a companion as to render our vascular shapes a genuine trio of brotherly forms, each supplementing the other in the work and play of everyday life. The cerebro-spinal man and the sympathetic man, whom you have not yet had the pleasure of greeting constitute another congenial pair in our family circle, as do also the conscious and the subconscious man. These also you have vet to meet. The skin man, who has but recently addressed you,

and the organic man, whose acquaintance you have yet to make, are rather eccentric members of our household, and although they are in close sympthy with all of our various bodily shapes, nevertheless have no particular members of the family that they prefer to chum with. As for myself, I too am a little eccentric in my personal attributes and have no favorites among my brother shapes, being equally interested and concerned in all of them. My position in the composite man is a very important one, as there is not one of our entire brotherhood of shapes in whose make-up I do not constitute an essential element. They call me the connective tissue man, and my name is well fitted to my character.

I am made up of tissue whose office is to bind the various physical shapes of our family into one symmetrical person, besides holding the various parts of every shape in such definite relations with every other part as to render it possible for any one of my brothers to assume and maintain the human form which alone entitles him to membership in our family. Thus do I constitute the great blending element of the body, serving to give each shape its human form and to bind all of the shapes into one symmetrical whole.

Much of my structure is sufficiently coarse to be easily discernible by the naked eye, but my finer parts require the use of the microscope for their demonstration. As there is no part of the entire human body into whose composition I do not enter, you will readily observe that my form is a very perfect one, and perhaps more than any other of our family I stand as a complete representative of the human shape.

I presume I am expected on the present occasion to describe for you my structure and the various uses I perform in the bodily economy. As to my structure, it differs very much in texture in different parts of the body, according to what is expected of me. But whatever form I take on I am always made up of what is known as white fibrous tissue. You know a common white thread can be made by skilled hands to manufacture articles which bear little resemblance to each other. It can be worked into various forms of lace, it can be woven into cloth, it can be tied into nets, it can be used for the stitching of garments, it can be twisted into cords or ropes, or teased into fringes. The cloth woven from it can be made into garments, sewed into bags, spread out into canvas, cut up for tablecloths, napkins or towels, shaped into wearing apparel, and so on in endless variety. The little white threads of fibrous tissue which are characteristic of my personal structure are equally facile

in their accommodation to the uses of the human body. Sometimes my fibers lie stretched out in closely hugging fasciculi, so closely approximated as to leave scarce any space between them, and in such numbers as to constitute me a living rope, which the muscular man makes use of in various places for uniting himself to the bony man. Such ropes are called tendons, and by means of the tendons which I thus form for the accommodation of our family the muscular man can manipulate the bony man to his liking. The largest of those tendons is right back of the ankle, and serves to connect the calf of the leg to the heel, so that the body can be raised upon its toes as occasion may require. There is another large tendon which fastens the kneepan to the upper part of the shin bone, or tibia, and known as the ligamentum patellæ. This tendon is the main one used in kicking. It might with propriety be called the football tendon. The cords which you can feel at the back of the knee, extending upward along the thigh, and known as hamstrings, are other examples of my tendonous make-up. More tendons can be felt at the elbow, and there is a large bundle of them in front of the wrists, the back of the wrists also being thickly seamed with them. I am rather proud of my tendons, for they are so strong and powerful that while they are in almost incessant demand in the various uses to which the body is put they are seldom off duty. Of course in extreme violence they are sometimes ruptured, and by accident or for surgical purposes they may be severed. But the rupturing of my tendons is very uncommon indeed. Muscle will tear and bones break as a rule before my tendons give way, such good material have I employed in their make-up and so carefully are they knit together. They are neither very sensitive nor very vascular, and vet if they are cut they will unite again and they can become inflamed and be a source of much pain and soreness. When inflammatory processes have once set in in my tendons they progress very slowly. They are hard to start and equally hard to stop. An inflamed tendon is a serious matter, because it takes so long for it to either get well or to slough away. My tendon product in the body is an extensive one, and is exhibited in a great variety of sizes, lengths and shapes. But enough has already been said to give you some conception of what my white fibrous tissue can do if just laid straight and bound together so as to form cords.

Sometimes my fibers instead of being bound into tendons are spread out into great flat sheets of white fibrous tissue, the course of the fibers being straight and parallel, as in the formation of tendons, and are then called aponeuroses. These are also at the disposition of the muscular man and are useful in aiding the purposes of the broad, flat muscles of the body. The best illustration of aponeuroses is found in connection with the abdominal muscles.

In many of the garments woven out of my white fibrous tissue the threads or fibrils cross and interlace in every conceivable direction instead of being laid straight, being closely knit, however, and by this arrangement forming a substantial groundwork for the construction of the skin, mucous, serous and synovial membranes, also the dura mater of the brain and spinal cord, or tough outer membrane which surrounds the brain and spinal cord, as well as the periosteum. By far the greater part of my texture, however, instead of being tightly woven as in the membranous structures, is put together very loosely so as to be characterized by a perfect maze of small-sized meshes.

On account of the numerous holes which are everywhere apparent, even to the naked eye, in this kind of a structure the tissue thus formed is commonly known as areolar tissue. The layers in the areolar tissue are very convenient as repositories of fat in the corpulent and of serum in the dropsical, also of air in emphysemic conditions. Did you know that you can take a poor, scrawny animal and by means of a hypodermic syringe pump this loose tissue, which everywhere underlies the skin and mucous membrane and dips down between the muscles and wraps the nerves and blood vessels, so full of air as to make it look fat and plump in every part? Did you also know that in dropsical conditions the water always settles to the dependent part, whether it be feet, hands, side, stomach, or back, and that its position can be changed at any time by changes in elevation? Well, it is these small holes in my areolar tissue that render possible these various phenomena. These areolar spaces open into the lymphatic man, as he has already described to you, and in this way the contents of my areolar spaces may under proper conditions be absorbed and taken back into the circulation.

When the meshes of my areolar tissue are not distended by fat, or liquid of any kind, or gases, they do not stand open, but relax into a flat membrane which acts as a sort of a winding for the body as a whole and for every part of it, my areolar tissue being so extensive as to be found almost everywhere throughout the body, both on its surface and in its interior. There is not an organ in fact in the entire body whose framework is not constructed of the white

fibrous tissue of which I consist. When employed in this way for the construction of organs the arrangement of my fibers is known as trabeculæ. As this loose areolar tissue of mine serves to envelop the various parts of the body, both singly and en masse, it is called fascia, and you will find it arranged, especially upon the surface of the body, in two layers, which are easily distinguished. The outer layer is called superficial fascia, and is recognized by the large areolar spaces which it everywhere exhibits. A little deeper down, however, where it acts as a closely fitting inner garment for the muscles, tendons, nerves, arteries, and organs, the meshes are not so large, and consequently are not so frequently employed as repositories for fats and liquids, and here it is called deep fascia. This deep fascia, however, which is the inner winding-sheet for almost every bodily structure, of course takes on different names according to the use made of it. Where the deep fascia serves as a bandage for the muscles it is called perimysium. When it is wrapped around nerves so as to form a coating for their safe transit to their destination it is known as neurilemma. When it is wrapped about a bone it is called periosteum, and when it lines the cavities of bone it is called endosteum. When it surrounds tendons it is called a sheath. Wrapping for the kidney, which is constructed in the same manner while it is really nothing but deep fascia, takes the name of capsule. And so on to a greater extent than it is necessary to detail for the purposes of the present occasion.

Arteries could not be built, or nerves traced, or skin constructed, or the brain, spinal cord, liver, intestines, pancreas, glands, or any of the bodily organs retain their shape or be held in their position without making use of some type of my connective tissue. Of course my connective tissue cells vary in shape to accommodate themselves to the business in hand, whatever it happens to be, being sometimes long, sometimes square, and sometimes branched and otherwise curiously made up; but under all circumstances, whether as fascia, or membrane, or tendon, or aponeurosis, my fibers always retain their individuality. That is, they have in common these facts; they are developed from the same embryonic elements, and they serve to support and connect all nervous, muscular, glandular, and vascular tissues.

The different varieties of fibrous tissue are interchangeable in different classes of animals, and in the embryo, and in growing normal and morbid conditions one form of fibrous tissue may be changed into another, and upon boiling they all yield like chemical

products. When put through all these various tests it may surprise you somewhat to learn that what is known as bone and cartilage and the dentine of the teeth are but different types of connective tissue. I neglected to inform you also that while all that I have said thus far has to do with the coarser structures of the body much of my bodily surface is microscopic in its nature. You know, of course, that the ultimate subdivision of every part of our physical structure is cellular, and that all cells are provided not only with cell contents but also with a cell wall for their confinement. Now I claim the entire contract for furnishing all cell walls of the entire body wherever they are to be found, which of course is everywhere. It takes pretty fine work to manufacture these delicate goods, but I have not yet heard any complaint of my output. The little bags which I furnish for cell construction seem to do their work as well as the coarser wrappings, which I supply for tissues and organs in the gross. But everywhere, under all circumstances, I connect, I sustain, I hold together, I envelope, I patch, I confine, and I might be fittingly called the tissue paper of the body, which is entwined about the body as a whole, its various organs and structures, and even the cells themselves, out of which the various organs are formed. Hence while in various places I go by different names, as you see, I am everywhere and always known, under all circumstances, as connective tissue. I insure harmonious action among the various parts of the body, prevent friction of one part upon another, bind together our entire congregation of bodily shapes: I am unifying, containing, sustaining and embracing in my propensities. If I stand for any sentiment in the bodily make-up it is that of brotherly love, for without me no organ could be formed, no composite man could be constructed. There could be no eye to see, no ear to hear, no organ of any kind to sense or to function. Thus without me physical existence would be an impossibility, for the various substances of which the body is composed would have nothing to shape or contain them. I feel my importance, and would no doubt be inflated with conceit if the deep sense of my responsible position did not serve to completely counteract my natural tendency to egotism.

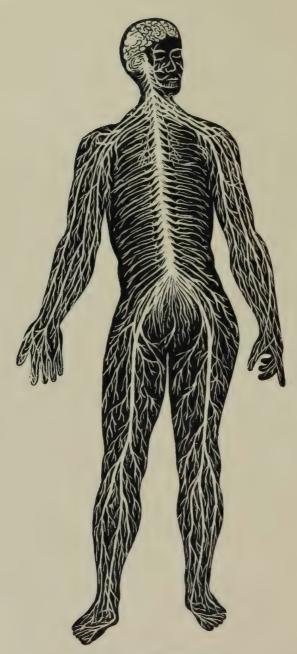
Liquids and gases leak through my meshes, but I hold my grip on solids, and it is impossible for these to escape my embrace except in a state of solution, and whatever change in bodily structures is accomplished must be secured by the process known as osmosis, that is, the transudation of fluids and gases through the pores of the various fabrics which I furnish for bodily purposes.

Having a decided tendency to porosity in my make-up, it is quite possible that you may in your minds give me a more or less spongy character, and for fear that by sapping up after the manner of a sponge too much of your time I will prove the correctness of your fancy, I will bid you good day. I thank you for your kind attention, and promise you as a reward for your patience an introduction to our most fascinating entertainer in the person of my brother shape, the cerebro-spinal man, whose story cannot fail to command your profound respect and attention, and is best told by himself. The cerebro-spinal man will be the next one of our family of shapes to present his autobiography.

Moved to gratitude by your kindly bearing, I respectfully bid you good day. But do not forget in your conceptions of the composite man the entwining characteristics of the connective tissue shape.







THE CEREBRO-SPINAL MAN.

## IMPERSONATION No. 8.

THE CEREBRO-SPINAL MAN.

## LADIES AND GENTLEMEN:

My connective tissue brother has announced me for your entertainment to-day, and here I am. But I feel my position to be delicate, difficult and embarrassing. You see, I do not feel quite at ease, for to give you a fair conception of myself I should have to give myself away in a good many respects, and confession, especially to brother mortals, is rather foreign to my nature. I do not mean that I am not willing to be known as I am, but I question the fairness of mortal judgment. In the sight of God I am trying to keep my conscience clear, but before men my reasons for doing as I do at all times and in all places must frequently be so obscure as to leave them guessing. Nevertheless, perhaps I can while away a little time with you pleasantly by a brief account of who I am, what I am, and why I am, furnishing you perhaps something to think about and give you a pleasant memory of the occasion. My remarks must be condensed, for they are expected to be brief. Unessential details will therefore be omitted and your attention invited simply to a few general conceptions of my characteristics and make-up, conforming to the example set by those of my brother shapes who have already appeared before you.

I see, I hear, I taste, I smell, I set in motion, I feel, I think, I am, and I am conscious that I am. I am the only member of the family of whom these statements can be predicated. The bony eye, the muscular eye, the vascular eye, the lymphatic eye, the areolar eye, in short, all the eyes furnished by the other members of our brotherhood, without me are totally blind. I grant that the composite eye resulting from the various eyes furnished by the several members of our family serves me as a convenient glass through which to gaze upon surrounding material shapes; but I alone have the power to see. I must confess that I am not that power, and that my claim to see is a little overdrawn, for I must own that it is the life in me that sees and not myself; nevertheless, being the direct

medium through which sight is accomplished it is quite natural for me to lay claim to the power of seeing. The same is true of all the senses as just enumerated. I am in reality the direct means by which all bodily consciousness and knowledge and experience are accomplished, and I am capable by means of my senses not only of adjusting our common form to outer circumstances but also making one part of our body conscious of another part. I hold indeed these various human shapes of ours in their proper relationships to each other, and can summon any or all of them to my aid if I will, and in this way accomplish the purposes of life. They all look up to me for guidance, and not a step is taken, no work is planned or executed, no earthly experience is had, that does not issue directly or indirectly through me.

As a tree plants its roots in the earth and reaches up into the air with its trunk and branches, so do I seem to extend myself in opposite directions. On the one hand I am projected into physical existence, upon whose form you now gaze. It is this projection which constitutes me a physical entity and entitles me to be registered as one of the brotherhood of human shapes. On the other hand I reach out into the invisible, the unseen, the ideal, in which realm my impressions are all registered, my purposes all lie, and my calculations are made. It is in this hidden realm that my impressions of the outer world are every one of them registered, and it is from these that my resolutions, which guide my every act, all take their issue.

But I must not confuse your minds by confounding my physical form with its indwelling vitality. When I say that I see, I hear, or sense in any way, or act, of course I predicate this of the conscious man that operates through me, for my material self, the parts that can be exposed with the dissecting knife or even the finer ones that can be observed only by the aid of the microscope, the entire nervous form that appears before you, are just as inert, inactive and helpless and dead as are any and all of our common brotherhood of physical shapes, some of whom you have already listened to and the rest of whom you will hear in the order arranged for their appearance.

The conscious man who animates my every part will tell you his story toward the close of this series of impersonations, and it behooves me to confine what I have to say to you at the present time purely to my physical make-up. I must therefore eschew

fancies and philosophies and treat you to merely an enumeration of physical facts. And now to my task.

I am aware that I am a go-between connecting the outer or material projection of our family with the invisible part of us. By the aid of my various senses impressions of the outer world are received and orders for the conduct and disposition of the body are carried out. I am a hard worker, and consequently require rest for recuperation. I really need to spend fully one-third of every twenty-four hours in unconsciousness, folding all my senses like the petals of a flower at sunset, in order to be at my best in my earth work.

The position which I occupy in my family is a commanding one, as you see, and would cause me to be its spoiled member if I did not live in perpetual recognition of the fact that only by means of my association with my brother forms has my physical manifestation been possible. I know that my arterial brother has brought me the material out of which I have been constructed. I know that the venous man, aided by our lymphatic brother, has removed the débris occasioned by the wear and tear of my daily activity. I know that my muscular comrade has served me as only a brother could, rendering the best obedience to my every command of which he is capable. I know that my bony associate has protected, strengthened and sustained me in all my purposes. I know that my connective tissue brother has contributed generously to my make-up. I know that our skin man especially has afforded me a broad expanse of surface for the accommodation of our common sense of touch. And I know equally well that the other forms of our brotherhood of shapes, whose acquaintance you are yet to make, have likewise in no small degree contributed to my comfort, effectiveness, yes, the very necessities of my material existence. You must remember there is no soloist in our home orchestra, that every individual of us is absolutely essential to the existence and activity of all the rest. So that while my manner of introduction may strike you as self-assertive, in reality my spirit is bathed in profound humility in the consciousness of my dependence for all that I am, have been, or can be, upon the other human forms with whom I am associated in this sojourn of time.

A full and appreciative consciousness, however, of my personal powers and importance are not only natural, but perfectly proper. One has no more right to underestimate his own God-given position and powers than he has those of another. And let me say

in complete refutation of all charges of egotism or self-aggrandizement that I am no greater than my brothers. Among us there is no high or low. We are all equal in importance, only we are different, and my initiative remarks are meant simply to epitomize my chief personal characteristics.

Now, as to my make-up. In construction you might liken me to a telephone system. My central office is what is known as gray matter, and the issuing wires are my nerves. Out of these two things, gray matter and nerves, am I wholly made up. Let me invite your attention to my gray matter, and then we will consider my nerves. You will then know about me all that I feel at liberty to reveal at the present time.

Of course you have heard of my brain and spinal cord, the former being contained in the cranial cavity and the latter dangling down the spinal canal as far as the lower border of the first lumbar vertebra. Perhaps you thought that the spinal cord extended the whole length of the spinal canal, but if so let me correct your impression. The spinal cord goes no farther than what in common language is called the small of the back. The spinal canal below this point is occupied by large bundles of nerves which have been given off from the spinal cord, but which have not yet been able to escape through the intervertebral foramina. As they thus fill the lower part of the spinal canal, the fibres of these nerves lie so straight and spread-out-like that they bear a very close resemblance to a well-formed horse's tail, and hence have been given the name of cauda equina.

Now the gray matter that enters into my formation is to be found in connection with the brain and spinal cord. Let me tell you where to look for it. Every human being, you know, is supposed to have brains, although from the way some people act you might think that there were exceptions to the rule. Such instances, however, are merely cases where the brain is probably asleep or defective, and consequently does not do itself justice. Now by my brain you must understand me to mean the entire contents of my cranial cavity. This in itself is a wonderful piece of mechanism that I should like to describe to you in detail if it were not foreign to my present purpose. As it is, however, I will permit myself to give you simply the barest outlines concerning it, just enough in fact to acquaint you with my cerebro-spinal shape, hoping down in my heart that I may succeed in arousing your curiosity sufficiently to entice you to a more profound and detailed study of my structure

as you will find it laid down in the standard works on human anatomy, for I am sure a careful study of my organization will amply repay you for all the time and energy you will be able to put upon it.

My brain has three coverings, called membranes; the outer one, or dura mater, adheres closely in every part to the cranial cavity and serves to nourish the inner plate of the skull bones which form it; the inner one, known as the pia mater, is a vascular membrane for the nourishment of the brain substance itself, while the third membrane is simply a shut sac of delicate membranous structure which separates the dura mater from the pia mater and is called the arachnoid membrane, one surface of it being closely adherent to the dura mater, giving it a smooth, shiny appearance, and the other resting loosely upon the outer surface of the pia mater.

Perhaps you did not know that the brain is constantly active and requires this arrangement of membranes to permit it to move about easily in its bony encasement without friction. The next time you get a chance, just watch the fontanelles of a young babe and you will notice that every time the child inspires, the fontanelles sink as though the brain were going to cave in and draw the skin after it, while during expiration the fontanelles bulge instead. In this way is the brain constantly churned up and down by the motion of the lungs, so that the frequency of respiration affects profoundly the amount of blood contained in the brain, and hence also its size and condition. Besides this the pulsations of the large arteries which enter the brain by way of the holes at the base of the skull make the brain substance to its very outer surface quiver with every pulsation. This trip-hammer action of the blood stream on the brain substance is unremitting throughout life, so that you can readily see that between the influence of the lungs and the heart's action supplemented by the peristaltic movements of the arteries, the brain is never really at rest. That it may not be bruised by the forces of respiration and circulation which swell its proportions and crowd it against its bony encasement, or as these two varying pendulums of activity tend to draw away its contents, you will find that the center of the brain is hollow, presenting a wonderfully constructed cavity known as the ventricular space. As this space is more or less filled with serum, which also separates the brain from the base of the skull, you can see that the brain rests upon a water bed, which keeps it from being injured as the respiration and the varying blood stream alternately expand and contract it.

The brain is usually described as having four grand divisions,

known as cerebrum, cerebellum, medulla oblongata and pons varolii. It is most all cerebrum, however, as this larger part of the brain fills the vault of the cranial cavity above the eyes and ears and extends from the forehead to the occiput. As far back as the ears this cerebrum rests also upon the bony surfaces which form the floor of the cranial cavity. This leaves but a small compartment at the back and lower part of the head to be occupied by the other three divisions of the brain. This little compartment is separated from the rest of the cranial cavity by a projection inward of the dura mater from the sides and back of the skull, roofing over the small part of the cranial cavity occupied by the cerebrum, cerebellum, medulla oblongata and pons varolii. It serves as a tent for these parts and prevents the posterior lobes of the cerebrum from resting down upon them. Of course it is named, as there is no integral part of anatomical structure which escapes a name. It is known as the tentorium cerebelli. The cerebellum, or smaller brain, occupies the back part of the base of the brain and is the second part in size. The medulla oblongata is in reality the upper end of the spinal cord expanded into a club shape and projected into the cranial cavity, resting to the extent of an inch and a quarter along the very base of the skull. The pons varolii surmounts the medulla and connects this with both the cerebrum and cerebellum. Thus is the pons varolii the veritable cross-roads of the entire brain. It is the connecting link which unites the four greatest parts with each other and with themselves. It rests on the base of the skull immediately in front of the medulla oblongata. The brain substance itself consists in part of gray matter and in part of white, the white matter forming bundles of fibers connecting different parts of the gray matter, or connecting the gray matter with the other parts of the body. There is gray and white matter in every division of the brain. In the cerebrum the whole surface of it, in front, behind, on the sides, above and below, is thickly covered with layers of gray matter. The gray matter is about the color of ashes, and hence is otherwise known as cineritious substance. In the cerebrum this gray matter or cineritious substance not only covers its entire surface, over its convolutions down into its sulci, wrapping its lobes and padding its fissures in layers of comparatively uniform thickness, but is also found in the center of the brain. the floor of what we have spoken of as the ventricular cavity. In this situation it takes the form sometimes of large knots or well-rounded accumulations of gray matter called ganglia, and sometimes it is spread out into flat layers variously known as valves, commissures, etc. The names are of little consequence, the chief point being that gray matter makes a bark or covering for the cerebrum, for which reason it is sometimes called the cortex, and is also found in nuggets, ganglia, or other forms, situated along the floor of the general ventricular cavity. In the cerebellum a similar arrangement prevails; that is, the gray matter covers the surface of the cerebellum, and some of it is found in its interior, having tooth-like processes known as the dentate body. The cerebellum, however, has no ventricular cavity. The upper part of the medulla oblongata forms the floor of the ventricular cavity, and is gray with the ashes of the cineritious substance, there being a thin layer of it covering its upper surface, and several spots, where the gray matter is found accumulated into special ganglia.

The pons varolii, too, although mostly constructed of nervous cords which serve as connecting links between the different parts of the brain and between the brain and the rest of the body, nevertheless is not entirely devoid of gray matter, and has a few ganglia in its interior. The pons is continuous with the upper end of the medulla oblongata, and together with that division of the brain completes the lowest part of the floor of the ventricular cavity. Two parts of the brain, therefore, the cerebrum and the cerebellum, are covered with the gray matter and contain ganglia. The other two parts, the medulla oblongata and the pons varolii, have no cortex of gray matter, but ganglia of it in their anterior and upon their upper surfaces. The gray matter of the spinal cord is all of it in the interior, and if a cross-section is made of the cord, the shape of the gray matter will be that of a bandy-legged capital letter H, the legs and the cross-bar being entirely of gray matter, while it is completely surrounded by white nervous cords proceeding longitudinally from the brain and from the gray matter of the cord itself to their distal destination in the tissues. The gray matter in all parts of the brain and spinal cord consists of variously shaped cells, microscopical in their appearance, but massed together in countless numbers, of a gravish appearance which has won for them their name, the gray substance of the brain and spinal cord.

The nerves to which I now invite your attention are all to be traced at their central or proximal extremity to the gray matter of either the brain or spinal cord. The white matter of the brain is largely made up of nerve fibers or private telephones connecting different parts of the brain. By means of these short nerve cords or

fibers the gray matter of one part of the cerebrum is held in constant and close communication with the gray substance of every other part, so that you will find these fibers running through the center of the brain in every conceivable direction, some of them running from before backward, some of them running diagonally, and some of them running directly from side to side. The so-called corpus callosum, which can be seen by separating the two halves of the cerebrum and looking from above downward in the center of the brain, is nothing but a great flat band of these fibers which runs from side to side, forming by its lower surface the roof of the ventricular cavity. The white fibers from the cerebellum pass from one side to the other by way of the pons varolii, and by legs or crura connect the gray matter of the cerebellum with the gray matter of the cerebrum.

The arrangement of the nerve fibers within the cranial cavity is extremely intricate and a fascinating study, as by connecting different parts of the brain it permits receiving impressions systematically from the outer world and consecutive thinking and harmonious willing and acting, for only as one set of gray cells knows what another set is doing can the cranial music make symphonies instead of discords in the activities of life. The gray cells are a vast concourse of intelligences that must act in harmony to co-ordinate thoughts, emotions, and brain activities of all kinds. My nerves which issue from my brain and spinal cord and connect this great battery of gray matter with the human machine which it is to both serve and control are known as cranial or spinal nerves, according to their origin. My cranial nerves, of course, all of them, start in my brain, and without exception they start from the base of the brain. They have their origin along the base of the brain and find their exit from the cranial cavity through holes, large or small according to the size of the nerves, along its base. There are an even dozen of my cranial nerves having various uses. Some of them serve as organs of special sense, while some of them are just nerves, like the spinal nerves. My story, although it might be interesting, would be too long for the present occasion if I should go into a detailed description of my nerves in their various specialties, and I must therefore desist, although I am strongly tempted to do so.

It is simply marvelous how the cells and fibers of one set of my nerves are so arranged as to respond to the vibrations of light, those of another to sound, those of another to taste, and those of another to smell, and how these faculties are never mixed in their functions.

although to some extent they supplement each other, one nerve taking on in an imperfect manner the functions of another that may be out of working order. It seems almost possible in some cases for the blind to see, the deaf to hear, the tasteless to detect flavors, and those who cannot smell to distinguish odors, vicariously. But I fancy it is all a matter of vibration, and to do justice to the subject would require exhaustive research and voluminous writing; therefore this task will scarcely be expected of me at present. You are all of you so accustomed to each faculty performing its separate function that you may not be deeply interested except as a matter of curiosity in understanding how the ears can see or how eyes can hear; how smell, or any one of the special faculties can take on the functions of any other; but suffice it for the present to call attention to the great fact that in five different ways aside from that of intuition does the outer world appeal to my consciousness, and that all of these ways are provided for by five specialized cranial nerves. At their outer or distal extremity they receive light or sound or smell or taste, as the case may be, and convey the impression to the gray matter, to which their proximal end is connected, and then imprint upon the receiving tablet of the mind whatever communication from the outer world they may be called upon to convey. What the mind does with these constantly accumulating reports is for the discussion of the spiritual or unseen part of our wonderful family, which has the marvelous power of keeping the faculties at their posts for further reports, or calling them off, as it may choose. You know vourself how eves that are open sometimes see and sometimes do not, ears that are in good working order sometimes hear and sometimes do not, how nostrils sometimes smell and sometimes take no notice of odors, and how the nerves of taste sometimes pay attention to flavors that appeal to them and sometimes seem to completely ignore them. I do not suppose that newspapers publish or act upon all the reports that are handed in to them. No more does the brain register for practical purposes all of the vibrations which come to it by way of its various nervous avenues. But my nerves are always on guard at any rate, and are ready for duty whenever summoned to

Most of my cranial nerves, like my spinal ones, have a fine wire or thread known as the axis cylinder, which is as long as the course of the nerve extending from its brain cell to its destination in the tissues. Wrapping this axis cylinder throughout its entire length and serving as an insulating medium to prevent induction of the electrical or magnetic forces which serve to convey impressions between the outer world and the gray matter, is what is known as the white substance of Schwann, the gelatinous matter of which completely surrounds the axis cylinder and protects it from harm and the loss of nerve force. The white substance of Schwann is held in shape by a tubular membrane known as neurilemma, which likewise extends from one end of the nerve filaments to the other. Nerve filaments seldom act singly, but bundles of them are combined together, and it is these bundles that are known as nerves. The nerve filaments are too small to be seen by the naked eye, but large bundles of them can be easily distinguished, and it is these bundles that can be readily traced by dissection, and are commonly known as nerves, and have consequently received different names, according to their location and destination.

All the nerves that issue from the spinal cord are known as spinal nerves, and leave the spinal canal between the various vertebræ of which the spine consists, their openings or exits being known as intervertebral foramina. At their spinal extremity each one starts by two roots, known as anterior and posterior roots, the posterior roots belonging to the nerves of sensation, and being known as afferent nerves, because they convey impressions from sensitive surfaces to the nerve centers, the anterior roots belonging to motor cords, which are known as efferent nerves because they convey impressions from the nerve centers to the muscles, to some part of which they are ultimately distributed. The nervous trunks which we come across in ordinary dissections are made up of both the nerves of motion and the nerves of sensation combined together. The skin is the great organ of sensation, and it is consequently upon its surface that the sensory nerves are mainly distributed. All bodily motion, however, comes from muscles, and consequently it is to these structures that the motor filaments are in all cases distributed. If you can locate any part of my body that does not feel, in case my sensory nerves are in a normal condition, you will be able to find a spot to which sensory fibers have not been distributed; if you can find a muscle that will not contract, provided my motor nerves are in a normal state, you will have located a muscle which has received no motor filaments; but I think you will have to look pretty sharp for such a discovery, as a muscle unsupplied with motor nerves would be a worthless organ, and a skin surface, however small, devoid of sensation would be a waste area. From these facts alone you can judge how accurately and minutely my nervous cords are laid, to each

and every part of our composite man. I, the cerebro-spinal man, consider myself the associated press of our family. By making use of the nervous cords which proceed from my nervous centers, bringing the various reports which come to me from all parts of the human anatomy, enabling me to issue orders accordingly, I can inform every part of what is going on in every other part. I can spread a knowledge of pain and danger until the entire organism is thrown into one stupendous panic, that will necessitate the suspension of all other business except attention to the disturbance, or by suppressing a report received at my nerve centers and giving no heed to localized cries of anguish I can prevent riots and consternation of bodily organs, and permit the composite man to go on the even tenor of his way, although some local part may be sadly disabled. The question of bodily philosophy and bearing rests with my animating part. My duty is done when my courier service between the inner and outer world is accomplished. The sole and simple function of my sensory nerves, both spinal and cranial, is to convey impressions received at the outer or distal ends of sensitive nerve filaments to nerve centers, and the full duty of my motor nerves, both spinal and those of my cranial nerves set apart for this purpose, is accomplished when I convey impulses from the nerve centers to whatever set of muscles is to act. Of course sometimes my messages involve attacks and sometimes retreats. Sometimes my composite man has to fight, sometimes to pray, and sometimes to die. Sometimes he has to work, and sometimes to play. Sometimes he is moved to expressions of keen delight, and sometimes is thrown into a physical expression of intense agony. I suppose the postman who collects letters and distributes them gets interested in the effects of the various messages which he carries to and fro and becomes deeply interested in the study of life which his avocation permits. function is quite similar, and that is why I have a tendency, even in what should be a mere literal description of my construction and function, to go a little beyond what is expected of me and take some notice of passing events. I like that figure of the postman, it just suits me. I believe it is a fascination for observing the effects of messages which he carries that makes him contented with his task, which otherwise would be monotonous in its tireless and meaningless routine. This is certainly true of myself. I should deem the carrying of messages from periphery to center, and from center to periphery again, a dull task indeed if I could not have at the same time the opportunity of studying the effects of my news at both ends

of my nerves. I told you that some of my messages brainward are panicky enough, while some are stale enough. But in all events impressions which I collect from the outer body and carry to the nerve centers of the brain and spinal cord are of sufficient variety and interest to keep the connecting links between the nerve centers in perpetual operation and to put them to their wits' end to know what disposition to make of the news brought in. And on the other hand, when the nerve centers decide what is to be done I study with equal interest the wonderful effect of the messages I carry to the muscular structures. I told you the business of life could not go on without my services, and I am newsy enough in my make-up to enjoy my task as a go-between.

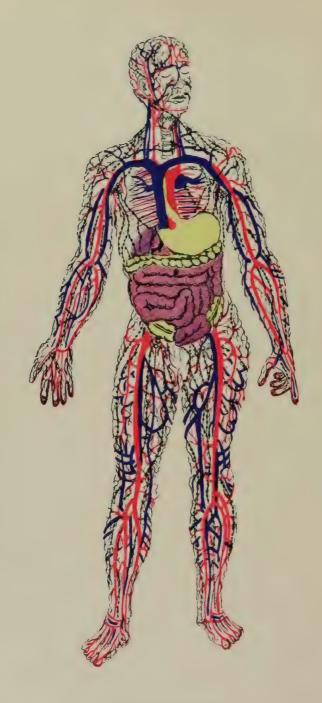
When I speak of moving muscles, of course I mean the voluntary muscles. There is another set of muscles over which I have no jurisdiction, and concerning which I have nothing to say. They have already been mentioned by the muscular man himself, and will be referred to again when my sympathetic brother—and I guess I ought to call her sister instead—takes the platform, and especially also by the tubular man. You might infer from what I have said to you that from a nervous standpoint I myself, the cerebro-spinal man, am the whole thing, but in this you are greatly mistaken. I have said nothing of my sympathetic brother or, more properly, sister, for if there is a girl in our family the sympathetic nerve is she, simply because she is perfectly capable of speaking for herself. She has brains, as indeed all women have, and she is one of the women who knows how to use them. too. Then, too, my own story has been so long, and I have by no means done it ample justice as it is, for I have had no time for referring to the other members of the family. There is no more interesting history connected with our brotherhood of shapes than that of the sympathetic man, who will next address you, and this shape is so quiet and unobtrusive in matters of everyday life that most of the next autobiography will be new to you. Oh, say! there is so much that I have not told you about myself that I do not like to stop. I have not said a word about the manner in which I am associated with the sympathetic man, have not touched the subject of automatic reflex nerve centers, have not spoken of the tactile corpuscles by which my sense of touch is accomplished, have said nothing about diseases which are prone to afflict me, have not spoken of my methods of development, repair and decay, and I feel that my nerves of special sense are feeling considerably slighted at not having received a more elaborate and extensive mention. But nevertheless my main object has been accomplished if I have impressed upon you the fact that I am a human form, with dimensions and organs and bodily structures coequal with that of my brother shapes. My height and girt and reach are identical with that of my brothers. I, too, have head, eyes, ears, nose, throat, and organs coequal with the rest of our remarkable family.

Reckon me, then, as one of the great brotherhood of shapes entering into the formation of the composite man, and I will forgive myself for not commanding a longer audience before you.

Do not forget to bring your notebook when my sympathetic brother addresses you, for heretofore he has not been sufficiently noticed in the history of the human form divine.







THE TUBULAR MAN.

## IMPERSONATION No. 9.

THE TUBULAR MAN.

# LADIES AND GENTLEMEN:

At the instigation of our sympathetic brother I appear before you on the present occasion as his substitute. The reason for delaying his appearance until another occasion and asking me to take his place now is that what I might tell you of myself would make such a good preface for his story that it would be a serious mistake to have my name scratched from the list of human shapes that go to make up the composite man.

Perhaps you did not know of my existence, but I fancy it will not take me long to convince you that I am entitled to stand before you as a well-recognized human shape and claim your audience as a legitimate member of our composite family. At any rate I will do the best I can to entertain you and present for your consideration a series of facts with which every student of the human form divine ought most certainly to make himself familiar.

My entire structure is tubular, as my name implies, and all physical expression of life and of death for our entire body is accomplished by way of my channels. With many of the tubes which enter into my formation I am sure you are familiar, and yet it may surprise you to know that tubular structures are so thickly dispersed throughout the human organism as to enter into the formation of its every part, so that in me, the tubular man, you will behold one of the most perfect of human shapes.

Let me call your attention first to the various tubes which enter into my formation, then to the simple and universal method of their construction, and finally to the purposes which I serve in the family of human shapes.

The largest and most widely known tube in my make-up is the alimentary canal, a tube about twenty-six feet long and extending from the mouth to the anus, having different names along its course, the first being known as the mouth, the next the pharynx, then the esophagus, then the stomach, then the small intestine, under

the names of the duodenum, jejunum and ileum, and finally the large intestine, described by anatomists under the separate heads of appendix vermiformis, cæcum, ascending colon, hepatic flexure of the colon, transverse colon, splenic flexure of the colon, descending colon, sigmoid flexure of the colon, and rectum.

Perhaps my tube next to this in size is the passageway by which air reaches the lungs. This extensive tube is shaped very much like a tree, having for its trunk the larynx and trachea, with a great many branches, growing smaller and smaller as they divide until they finally become microscopical in appearance. The trunk of my respiratory tree is made up first of the larynx, and then of the trachea, after which come the innumerable bronchial tubes, the first two being large ones, and afterward a continuous set of bronchial tubes, which increase in number as they decrease in size until they terminate in exceedingly minute and irregular shaped expanded extremities known as air sacs, which serve as the meeting place of the blood and the air. It is from these air sacs that the blood receives its breath of life and is transformed from a dark, purple, muddy, sluggish, sewage-laden stream into the bright red river of life which flows out into all the tissues of the body for their nourishment.

By the way, while speaking of it let me remind you that three of the men who have already addressed you are but part of my own construction. The arterial man, the venous man, and the lymphatic man are tubes, and as they have already been paraded before you as human shapes, and as I embrace all of them and a good many other tubular structures besides, you can readily see what an injustice would have been done me if my sympathetic brother had not been thoughtful enough to insist upon my taking the floor and presenting myself to you as a well-recognized member of our brotherhood of forms. The involuntary part of the muscular man also made brief mention of my existence, but scarcely did me justice, and hence the necessity of my appearing before you in person. I venture to say that neither my arterial, venous or lymphatic brother mentioned to you the fact of my existence, and that they were merely parts of my more perfect shape. Their carelessness in the matter, however, must have been purely an oversight. You might think it was jealousy, but please be assured that in our harmonious family jealousy is unknown and only by mutual help and respect can we work out harmoniously the purposes of our common life: and if my existence had not been recognized even by the sympathetic man and I had not had the pleasure of appearing on the

program of your entertainment at all, I should have had no hard feelings in the matter and have registered with you no complaint. At the same time I am glad not to be left out, and I wish to thank my sympathetic brother for his kindness in finding a proper opportunity for me to present you with an epitomized statement of the principal facts of my existence.

You will remember, perhaps, that the skin man made mention of the innumerable sweat and sebaceous glands and hair follicles with which his surface was so thickly studded in every part. Please remember that all these are a part of my own make-up, being nothing more nor less than tubular structures, varying somewhat in shape. Corresponding to these minute tubules on the surface of the body are the mucous glands, peptic glands, Brunner's glands, and crypts of Lieberkuhn and simple follicles, which honevcomb the surface of my alimentary canal, and indeed all mucous surfaces present some type of minute tubular structure. The salivary glands and the pancreas are nothing but tubes expanded into racemose shape. The kidneys consist almost entirely of minute uriniferous tubules, which are straight in the pyramids and more or less tortuous in the cortical substance. All these multitudes of minute kidney tubes empty into the expanded tube which occupies the pelvis of the kidney, which terminates below on either side in another tube known as the ureter, at whose lower termination is an expanded tube known as the bladder, out of which empties the single tube universally described as the urethra.

The structure of the testicle is tubular like that of the kidney, and is provided with a single tube, the vas deferens, which serves for the passage of the semen from the testicles into the prostatic portion of the urethra. The prostatic gland itself consists in a great measure of a dozen or fifteen racemose glands known as the prostatic ducts.

In the female the vagina is a tube, the uterus is a tube, and the fallopian tubes which connect the cavity of the uterus with the peritoneal cavity define their nature in their name. They are simply tubes for the passage of the ova from the ovaries to the uterine cavity.

I did not mention our nose, but everybody knows that its prominence merely stands for a cavity, from which there are tubular branches into the frontal sinuses, ethmoidal sinuses, and the cranial cavity, backward by way of the eustachian tubes into the middle ear, laterally into the maxillary sinuses known as the antrums of Highmore, and posteriorly into the pharynx. You have heard how fleas

have other fleas to bite 'em, and so on ad infinitum. Well, quite similarly, my larger tubes have smaller tubes to feed them, for all of my mucous membrane tubes are lined by mucous glands, which are likewise tubular in their structure.

Now in view of all these facts do you really think that I was extravagant in my claim to being one of the most perfect of our brotherhood of shapes?

In structure my tubes of which I consist are all built on a common plan which is very simple. Without exception, whether the tubes be little or big, microscopical or apparent to the naked eve, they consist of three coats; their inner coat consisting of what is known as mucous or serous membrane as the case may be, the difference between the two being merely a difference in the form of the epithelial structure which covers their surface and the presence or absence of tributary glands; an outer coat, which is constructed by the connective tissue man and made up of white fibres; and a middle or muscular coat. In this muscular coat the fibres are arranged in two directions, some of the fibres running longitudinally, so that when they contract they shorten the tubes which they surround, and others running circularly, so as to narrow the caliber of the tube by a squeezing process whenever they contract. By this method of simultaneously shortening and squeezing, very much after the manner in which a cow is milked, all my tubes, little and big, are made to undergo what is known as vermicular motion, or peristaltic action. Some of my tubes carry gases like the bronchial tubes, and the intestinal tract at times; some of them carry solids, like the alimentary canal; and some of them liquids, like the various tubes which constitute the urinary tract, like the sweat and sebaceous glands and hair follicles, like the mucous and other glands opening on mucous surfaces, like the salivary glands and pancreas, like the gall bladder and gall ducts, and like the blood vessels and lymphatics. But it matters not whether my tubes convey from one part of the body into the other, gases, liquids or solids, their function is universally accomplished by this same worm-like motion known as peristaltic action. The involuntary muscles which accomplish this wavelike squeezing and shortening process of my tubes are not under the control of the cerebro-spinal man, but are presided over solely by my sympathetic brother, and between you and me this is why the sympathetic man did not feel like addressing you to-night, but presented me before you as his substitute. He wanted you to realize before he appeared upon the platform the extensive field of operations of myself, the tubular man. When you stop to think that I carry the breath of life whose inward current is laden with oxygen and whose outward current is charged with carbonic acid gas and moisture, that I receive and disburse all the solids and liquids and gases which are taken into the body, and have the labor of transporting to their destination all those which pass out of the body, thus furnishing the entire system of supply and funeral trains for the whole of our common form, you will readily see that my shape must be coextensive with that of every one of my brother forms. In reality, I have in my keeping the entire bodily commerce, with the solitary exception of the activity which results from chemism. My tubes are all of them a little leaky, especially those which serve as conduits for liquids, so that in many places the contents of my tubular structures sweat through my walls in minute drops, which are received into the various structures through which I pass. In the same manner tissues which are saturated with liquids can be relieved by a corresponding leakage into my interlacing canals. This process by which liquids pass through my walls to and from the tissues is known as osmosis. When liquids leave my canals and leak out into the tissues, such action is known as exosmosis. When liquids find their way from the tissues of the body into my canals, the process is known as endosmosis. But the term osmosis includes both processes. Now, except osmosis, which is what I recently spoke of as bodily chemism, every form of activity in the human body is accomplished by myself. I bring all the materials, solids, liquids and gases which are employed in the construction of the human body to their several destinations, and by my channels of exit carry away all the solids, liquids and gases which constitute bodily debris. Thus do I dominate the entire bodily commerce, and hence the necessity of my shape being so perfect as to reach the remotest recesses of our common bodily construction.

I have made my remarks as brief and epitomized as possible, but trust that I have succeeded in sufficiently clearing a way for my sympathetic brother so that he can now address you without further embarrassment. What he will desire you to remember most of all, I think, is this series of consecutive facts: that with the exception of osmosis the entire commerce of the body is conducted by the tubular man, that his method of doing this is known as peristaltic action, that peristaltic action is in all tubular structures, from the sweat glands to the alimentary canal, effected by the system of involuntary muscles, that muscles never act except under the impulse

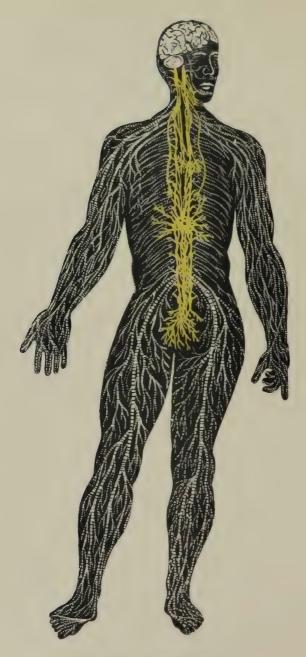
of nervous stimulus, and that the nervous stimulus which furnishes the motive power for the entire set of involuntary muscles, whose office is to form the effective working coat of all the tubes, great and small, is furnished solely by the sympathetic man.

Now, my sympathetic brother, I hope I have presented the situation to your entire satisfaction, and as you have no further excuse to delay your appearance you will present yourself to this audience at its next meeting and tell the story of your life in a manner creditable to yourself.

Ladies and gentlemen, we are all proud of our sympathetic brother, so proud that however well he may present to you the story of his structure and function he will find it difficult to frame language adequate to his purpose. Words are such poor and inadequate vehicles for human expression. Our sympathetic brother is really the inspiration of our whole family, and I am only his John the Baptist, running before him, fully realizing that he who comes after me is greater than I, the latchet of whose shoes I am not worthy to unloose. The medical world, and much less the laity, are not yet capable of fully comprehending the wonderful achievements of the sympathetic man. And to make matters still worse, he is of such a modest nature that although you will find what he has to say concerning himself exceedingly interesting and instructive, we none of us, although his brother shapes, have the least idea that he will succeed in giving you an adequate impression as to his influence and importance in our family of human shapes known to you as the composite man.

I leave you now to be entertained at your next gathering by the presiding genius of our family, the sympathetic man.





THE SYMPATHETIC MAN

## IMPERSONATION No. 10.

THE SYMPATHETIC MAN.

#### LADIES AND GENTLEMEN:

I feel deeply grateful to my brother, the tubular man, for preceding me on the program prepared for your consideration by our family of human shapes. You see he has no tissue peculiar to himself, but is made up entirely of contributions from other members of our family, taking his outer coat from the areolar man, his middle coat from the muscular man, and his inner coat from the skin man, and claiming a part of the vascular and lymphatic men as belonging to himself, and altogether, as he is so apparently lacking in individuality, he is seldom looked upon by casual observers as a distinct member of our composite family. And yet, as I think he has convinced you, appearances to the contrary notwithstanding, he has his individuality and is really possessed of as perfect a shape as any of us, and is by no means the least important member of our family. Hence it was proper that he, as well as his brothers, should appear upon the platform and make his autobiographic remarks. His speech was not quite as comprehensive as it might have been, as I think he felt sort of half forgotten, and that he was really made use of as a forerunner of myself, and so got through with the occasion as cheaply as possible. However, his remarks were sufficiently complete to serve as an appropriate introduction to the story which with your forbearance it is now my place to tell.

I feel as though the cerebro-spinal man, if he had been so inclined, could have made my task an easier one, but undoubtedly he either thought it would please you better to have me tell my own story, although he knew my natural diffidence and inexperience in speaking, or else he had exaggerated ideas of my being able to take care of myself on the platform without his friendly assistance. It seems to me that he should have been much kinder than this, for our lives are so closely entwined that much of our work is in common and he knows all about me, and can talk so much better than I can that I confess to a little disappointment that he did not find it in his

heart to lighten my task by making more extended reference than he has seen fit to do to the part which I play in the human economy. So with thanks to the tubular man for his generosity, and regrets to the cerebro-spinal man for his lack of the same quality, I shall proceed with my story as best I can.

You know that the cerebro-spinal brother and myself are the sole means by which life flows in from its unseen sources and animates our composite nature. Not a sensation is recorded, not a muscle is moved, not a function is performed, not a shadow of growth or repair takes place in the human body that is not presided over and accomplished by means of nervous messages for which one or both of us are responsible. Now the cerebro-spinal man has already addressed you, and you will remember something of the part which he plays in our family of shapes. The part which I play is the part which he leaves unperformed. He is busy with the sensations of consciousness, which include the five senses, and with all physical activities that are under the influence of the same. That is, he can walk and talk and dominate the entire system of voluntary muscles to his heart's content so long as they have strength enough to follow his bidding. But as the tubular man has told you, there is a set of muscles over which he has no control, and those are the muscles which are known as the involuntary type and constitute one of the coats of the tubular man, and the action of these muscles. and consequently the entire activity of the tubular man, is wholly dependent upon me. The heart cannot throb, the arteries cannot pulsate, the air cannot reach the lungs, the blood cannot get back to the heart, the various glands and tubular structures of the body cannot work; in short, no bodily commerce whatever can be accomplished except under my direct and personal supervision. The cerebro-spinal system may boast of his senses and his power to transport the body from place to place and employ it to his liking, but he would have no body to domineer over if it were not for me. Body building and repairing are my personal function, and my task is so confining that it would be a wearisome one indeed if it were not a labor of love. You see the cerebro-spinal man can sleep eight hours out of the twenty-four and loaf a good deal of the remaining time if he chooses to do so. But if I should sleep for an hour our entire family would be completely wiped out of existence; and whenever I even slow up or drag in my work, as I sometimes do from sheer exhaustion, serious mischief is sure to be visited upon some part of the human body, and the loss must be quickly made up or serious disaster is sure to follow.

The tubular man has told you that he is responsible for all bodily commerce, for all organic activity, for all body building and repairing, as no building or renewal of physical texture can be accomplished except through his agency. Now while that is true, it is equally true that it is myself who furnishes the tubular man with all his inspiration. I am the steam which runs his machinery. Without me he can do nothing. So long as I am vigorous and in good working order the tubular man can perform his important functions in a satisfactory manner, but when I am weak or from any cause run down so that I am unable to furnish the tubular man with the customary amount of inspiration all the wheels of the human organism run more slowly, and some of them are sure to clog, and the entire body becomes like sweet bells jangling out of tune. So you see I must be the first human shape to be born, the last one to die, and must be in such constant and forceful presence as to supply the tubular man constantly with all the stimulus which he needs for his important operations. The body can do nothing without me, and my occupation of supplying the inspiration for our entire family is so constant and engaging that I am compelled to attend strictly to business night and day from one end of life to the other and have no time whatever for observation, education or amusement outside of my daily tasks. As a rule, I perform my work so noiselessly that the rest of the family are scarcely conscious of my existence, for when I am well everything works all right, each organ plays its part as usual, and the whole machinery of life is operated quietly and without friction. When I am not well, however, and am not quite equal to the demands made upon me, I have two ways of making it known to the family. One is by appealing to self-consciousness through the assistance of my cerebro-spinal brother, with whom I am closely associated, thereby causing some disturbance of sensation or locomotion (the most frequent disturbance in this direction being the instituting of some form of pain); or I sometimes take it into my head to say nothing to my cerebro-spinal brother about my affairs, but simply shirk my duties, and my inefficiency becomes manifest only when some one or all of the organs suffer from some function poorly performed.

. There are two of our brotherhood that belong to the unseen realm. One of them is known as the conscious and the other as

the sub-conscious man. The conscious man inhabits the cerebrospinal system. My own organization is the dwelling place for the sub-conscious man. These human shapes are to address you as best they can in a short time. My purpose in making any mention of them in the present connection is to inform you that it is through my agency that the intuitions and impulses and inspirations of the sub-conscious man flow out into the bodily tissues and move and invite the composite man to some form of activity. So you see that in a way the important powers which I have been arrogating to myself are really those of the sub-conscious man, and I am simply the humble instrument by which he exercises his influence in the bodily counsels. Just as the tubular man acts as my agent for carrying out my purposes in the human economy, so am I merely the agent of the sub-conscious man. Hence although it may appear to you that I talk as though I had power within myself it is always with this mental reservation, acknowledging my entire dependence upon the soul within me, who will claim your attention later. I am, then, simply his messenger or agent.

Now. like any other messenger or agent, if I am well and in good working order I transmit these emotions and inspirations to the conscious man for his consideration and judgment with accuracy and clearness, but if I am exhausted or ill-conditioned in any way and the rhythm of my usually harmonious activity is in the slightest disturbed I am unable to perform satisfactorily this highest duty of my life. You know that it takes a glass perfectly smooth and without a flaw to transmit white light unbroken. Distorted or imperfect glass will break up rays of white light which are passed through it into rainbow hues, so that it gives the observer an erroneous impression of the nature of light itself. In much the same way may clean purposes, wholesome aspirations, worthy impulses, heaven-sent inspirations intrusted to me for delivery to the composite man be delivered by me as faithfully and true as they were received if I am in a normal state. But unfortunately if from any cause whatever my strength is weakened or the rhythm of my various parts disturbed, as these various messages pass through my organism on their way to the tissues, they are changed in their coloring, distorted in their meaning, converted into different and unworthy messages from mind to matter, thereby transforming truth into falsity, good into evil, virtue into vice, and very generally upsetting the moral, intellectual and physical standards of excellence according to the degree of my disability as I undertake the task of conveying to the various bodily tissues the messages with which I am intrusted by the sub-conscious man who dwells within me. In other words, to put this same thought in plainer language, for I feel that I have but poorly expressed it as it is, you cannot transmit white light through crooked glass, you cannot produce good music upon an instrument which is out of tune, nor can the body receive clean inspirations and impulses when the sympathetic nervous man, through whom only they can be transmitted from mind to matter. is ill-conditioned. Such being the case, you would naturally think that my importance would long since have been recognized by the medical profession, and by the laity as well, and that the study of the waste and repair of the sympathetic nerve would have been regarded as one of vital importance. Astonishing as it may seem, however, it is only of recent years that much notice has been taken of me; and although I am responsible for all bodily conditions, the manner in which every organ in the entire body performs its function, my characteristics, habits and necessities have been badly slighted. If I do my duty on the present occasion, however, I am sure such will no longer be the case with those who are within sound of my voice. for you will be made to realize that it is through my agency only that physical perfection can be attained and physical defects, either inherited or acquired, can be corrected. But I have detained you long enough with generalities, and now to the more specific business which is expected of me on the present occasion.

I must first tell you something of my physical make-up, and then furnish you with brief references to my physiology. Of course, like my brothers, I am prone to sickness and can get up as interesting pathology when conditions are right as any of my fellows, but pathological considerations would have to be extensive to do them justice on the present occasion, and so will be omitted. So, first of all, permit me to make brief reference to my anatomical structure.

Like my cerebro-spinal brother, my entire shape is made up of nerve centers and nerve cords issuing to and from them. My nerve centers constitute my brains, and these, I must confess, are a little scattered. But it doesn't matter much, for I have very little thinking to do; in fact, I never reason about anything. I have a splendid memory, for my activities are almost entirely automatic. The nerve centers in my cerebro-spinal brother are massed together and constitute a tremendous nervous battery, which acts as the phonograph of life, for he not only receives impressions but talks back, and does not always use good language either, and you can never tell

what reply he is going to make to impressions received. With me it is different. I always give the same answer to the same impressions so long as I am in good health and able to do so, and no amount of education or training seems able to change my nature. This, of course, makes me very reliable, and adapts me well for my position as a steady provider of the force which propels all of our bodily machinery. My brains are so widely scattered that you will find fragments of them in almost every organ of the body. I provide separate nerve centers for the heart, for the lungs, for the liver, for the kidneys, for the spleen, for the brain, for the intestinal tract, for the bladder, for the uterus, for the prostate gland, and indeed for all the so-called vital organs. Beside these small fragments of brain tissue which are located in the various organs, the principal part of my brain substance consists in small knots or ganglia of gray matter, arranged longitudinally-in two nervous tracks, which extend in front of the spinal column from the base of the skull to the coccyx. These sympathetic ganglia of mine are arranged as practically one ganglia for each vertebra. In some places, however, as for instance in the neck, two or three of the ganglia are so closely related as to practically form one, so that instead of there being seven ganglia for the neck corresponding to the number of vertebræ, there are only three on each side, and in the dorsal region instead of there being twelve ganglia there are only eleven. In the lumbar region, however, there are five, and in the sacral region there are five, besides the ganglion impar (situated in front of the coccyx), in which the lower ends of the chains of ganglia are united. I have called these two rows of ganglia chains. They are much more like strings of beads, for although they are very small affairs, the larger ones being but little bigger than a pea, they are connected by nervous cords so as to form one continuous string on each side. I have four ganglia also on each side located under the skull, all of them being closely associated with the fifth nerve of the cerebrospinal man, which is the nerve of sensation for the head and face. One of these ganglia is in the orbit and communicates with the socalled supra-orbital nerve. One of them is located right back of the upper jaw in a cavity known as the spheno-maxillary fossa, and is fastened to the superior maxillary nerve or the one that supplies the upper teeth and the middle of the face. A third one hugs the base of the skull just where the inferior maxillary nerve, which is the one which supplies the lower teeth and the lower part of the face, comes out of the skull, the opening being called the foramen evale; while a fourth one is located right under the lower jaw in close association with one of the salivary glands. This one, too, has a close association with the inferior maxillary nerve. There is one other place in which are collected together several large ganglia, constituting the most pronounced association of nervous matter in my entire organization. It is located right back of the stomach, and from it issue the nerves which proceed in every possible direction, and hence it is called the solar plexus. So conspicuous is this collection of gray matter that I have permitted it to be called the abdominal brain. This important place seems to be better appreciated by pugilists than by doctors, more is the pity.

Now while the cerebro-spinal man has his separate duty to perform in our family of shapes, and while I also have mine, you will understand how close is our association when I tell you that every one of the ganglia which forms the string of nervous matter extending on either side in front of the spinal column from the base of the skull to the coccyx has issuing from it a nervous filament which passes backward to mingle with the nearest spinal nerve as it issues from the spinal canal. Aside from giving off this filament to the cerebro-spinal system, it receives a filament from the cerebro-spinal system in return. Thus there is not one of my ganglia which does not have a double communication with the cerebro-spinal man at its root, one nerve going from the ganglia to a cerebro-spinal nerve, and one nerve proceeding from the cerebro-spinal system to the ganglia; so that we can talk to each other at the same time that we listen.

In addition to this the cerebro-spinal man and myself are closely associated in what is perhaps the most important function of the human economy, and that is the circulation of the blood. When the muscular man addressed you, you will remember he spoke of his voluntary fibers, which are under the control of the cerebro-spinal man. He also told you of the involuntary muscular fibers which were under my control. The tubular man told you the same thing, except that he did not say so much about the voluntary muscles, because he had nothing whatever to do with them, his activity being dependent solely upon the involuntary muscles. Now, as you have been told by both of these brothers of mine, the middle coat of the arteries, and of the veins also, is muscular, and the muscular fibers are of the involuntary type, and consequently are properly

under my personal jurisdiction. And so they are, at all times, day and night. But I wonder if you realize how important to our family is the circulation of the blood.

The arterial and venous men have both spoken to you upon the subject, but for fear you have forgotten it I wish to remind you that the circulation of the blood is responsible for all bodily changes. Not a cell ever reaches its destination in the tissues of the body that is not floated there by the blood stream, and not a bit of waste matter is carried away that does not eventually find its way into the blood stream, which in its course carries it to its avenue of exit. The circulation of the blood, then, is all that builds the body, or all that pulls it down. There is, then, no remedial measure which is serviceable in the healing of the sick that does not accomplish its purpose by influencing the circulation of the blood, either locally or generally. Now I can take care of this blood stream all right, for I do so when the cerebro-spinal man is either in a natural or induced sleep. I do it when he is under an anesthetic, I do it when he is under hypnotic influence, I do it when he is busy, I do it every night when he goes into voluntary inactivity, I do it when he is disabled by concussions and shocks that are severe enough to put him to sleep, but not severe enough to disable me also. But my cerebro-spinal brother is a little jealous of my power, or else he is anxious to befriend me in this, my most important task, whichever way you choose to interpret his motives. At any rate, he does not leave me in sole possession of the involuntary muscular fibers which surround the arteries and veins, and which consequently are responsible for the pulse beat and the return of the blood stream. For this important purpose the terminal nerve fibers of the cerebro-spinal man and those of my own intermingle so closely as to scarcely be distinguished from each other, thus furnishing a separate nervous system called the vaso motor, which dominates the entire circulation. In this way either of us can hurry the heart's action or slow it, can blush or pale an organ, can influence the blood supply to any part of the body. You watch any face when the conscious man is contemplating an object which he dearly loves. The blush which then suffuses the face his thoughts and feelings are entirely responsible for. On the other hand, when the stomach is overloaded and I have more than I can do to carry on the processes of digestion, and as a result the arteries of the head do not get my usual supply of nervous force to make them contract as they should, but remain too full of blood, our face is then made red and the blush which suffuses it has nothing to do

with the thoughts and feelings, but is simply because my own work is poorly accomplished. So that either of us, the cerebro-spinal man or myself, can blush or pale a face. Now, I have used the face simply as an illustration. But his thoughts and feelings can in a like manner influence the respiration. They can in a like manner influence the action of the heart, they can in a like manner distend or contract the liver, they can in a like manner influence the action of the kidneys and bladder. In fact, they can blush or pale any part of our common organism, either internally or externally. And so can I. And the way he accomplishes his purpose is in a manner similar to my own, viz, by the influence which I can bring to bear upon any part of the blood stream. So while we are closely united, as you have seen, at our nervous centers, my ganglia communicating with his nerves, and his nerves communicating with my ganglia, we also meet in a still closer association if possible upon the coats of the blood vessels. All other involuntary muscles are under my personal control, and he is unable to influence this special function of mine except as he accomplishes it by way of the circulation of the blood. Of course I can influence his voluntary muscles, for I can starve them or feed them, but as he influences my domain by acting through the blood stream, I return the compliment. You see that in the blood stream as well as at the nervous centers we are so closely united that many anatomists say that we are not distinct organizations, but simply two parts of a whole. Into this deep question of our personal identity, however, I do not propose to enter upon the present occasion, suffice it to say that in our own minds we are perfectly satisfied that while we have much in common we have each much that is not in common, both in the matter of sensations and of emotions, so that in our hearts we well know that we each have an individuality of our own, and hence have thought impulses to activity which are quite different. His activities are all in the realm of consciousness, while mine are purely automatic. If you put a ball into his hand, he can hold it or let it go as he chooses. If you distend one of the tubes which I supply with nervous force with anything solid, liquid or gaseous, and put my muscles on the stretch, just as sure as I am in working order I will induce the muscular fibers to contract upon the same, and have no power in myself to order otherwise. This may seem to you a weakness upon my part, a lack of judgment, an absence of reason, and perhaps this is so; at the same time it has the great advantage of furnishing a reliable supply of nervous power for the rhythmical action of all the various organs of the body.

I told you that small fragments of my brain substance were to be found in the various organs of the body. By this arrangement, owing to my automatic action, each organ is more or less a law unto itself, and is capable of sustaining a rhythm or definite time of action peculiar to itself and irrespective of the other organs. By means of this arrangement the lungs have a certain rhythm, their customary rate of action being about sixteen times per minute. The heart and arteries have another rhythm. Their beat, as you know, is from sixty to seventy times a minute in average persons. In the same way the stomach has a rhythm. The small intestine has a different rhythm, and the large intestine a still different one. The liver has a rhythm, and so has the spleen, and so have the kidneys, likewise the bladder, the uterus, and in fact the same is true of all the important organs. Now in health, although the rhythm of the various organs is quite different, nevertheless they are so arranged as to work harmoniously together, constituting the sublimest symphony in all creation, for there is no grander music in the entire universe than the harmonious action of the various organs in a healthy human being. It is interesting to watch the evolution of a musical theme by a large orchestra. The violins and cellos, the bass viols, and flutes, the horns, and harps, and drums, each having its separate part to play, and yet with such due respect to the other parts of the orchestra as to blend harmoniously in the general flow of a musical creation, which sometimes marches like the tread of an army, sometimes fades like a dying day, sometimes sounds like a choir of angels, and sometimes deep-voiced, like the rage of a storm. In short, there is scarcely a human experience in the realm of thought and emotion that cannot be symbolized in music and recognized as true to life when properly interpreted by a well trained orchestra. But the symphony of life as displayed by the organs of a living, thinking, feeling, throbbing, active human body in perfect health is vastly grander in its conception and in its accomplishment, and the human being that has tuned his senses to an appreciation of bodily harmonies as they are evolved by the different parts of his own organization in harmonious action, has the privilege of daily concert performances by the side of which the feeble efforts of man's created orchestras are positively puerile.

Before dismissing the comparison of the music of the organs with that of an orchestra it may be well to call your attention to

another point of similarity. In an orchestra if one of the instruments be out of tune or out of time the harmony of the musical feast is more or less seriously disturbed according to the prominence of the instrument involved. This is equally true of the great orchestra of the human organs. If the rhythm of any one of them is disturbed by any type of irritation so that its rhythmical function is interfered with the symphony of life is materially disturbed and sooner or later the music of health is transformed into the bodily discord known as disease. Please recall what I have just said concerning the transmission of white light through crooked and distorted glass; how it is broken up into rainbow hues, and does not appear to the observer as white light. And also recall the application of the illustration to the human body. All desires, impulses and inspirations entering the subconscious man by way of the sympathetic nerve as pure and true and worthy as the source of all good can start them, are turned and distorted into their opposites by having to pass through disordered conditions of the sympathetic nerve. Both of these illustrations, that of the light and that of the orchestra, are perfectly true to life, and by the aid of one or both of them I hope you will be able to understand how important it is that my entire organization should be kept in the most perfect order.

Right here I have it in my heart to detain you longer and divulge for your benefit a long array of new truth concerning myself which has recently come into the world, which is in direct keeping with what I have just said to you. But my remarks are already long drawn out, and if I should once get started upon this subject I fear that you would weary of my story. At any rate, it would make my own remarks out of proportion to the modest speeches which have been made by my brother shapes, and I shall not abuse my present privilege by turning liberty into license. I must make my speech brief, as my other brofhers have done, and consequently must leave the multitude of things unsaid which my heart is burning to tell you of. Perhaps we may meet again, and if I have said enough to awaken your interest in my history we certainly shall. For now that my importance as an agent for either health or disease, for life or for death, is being gradually recognized by the medical profession who has the well being of the world in its hands, I begin to hope that the embarrassment under which I have so far labored will be materially lessened and the influence which I wield in our family of forms will be more frequently made use of in righting matters when they go wrong in the composite man, to whom we all humbly bow as the one purpose

for which we are all created. As the whole is greater than its parts, so the composite man is greater than any of us, and what is good for him is good for us. So we must wait our turn for audience, for appreciation, for attention. If any remark which I have dropped has aroused the curiosity of any of my audience to learn more of me, be sure that the knowledge now in the world is quite sufficient to give you much satisfaction and amply repay you for whatever investigation you may choose to make. I may be such a fool that I cannot reason or cannot tell the difference whether the involuntary muscular fibers which I supply are inclosing a substance which should be squeezed along the tube which contains it; or whether the distension of the involuntary fibers is due to a diseased state of the membrane which lines the tube. I may be fool enough to try to induce a throat to swallow itself when it is sore, a bladder to strain after all urine is passed and only an inflamed lining is stimulating the muscular coat to activity; I may be silly enough to strain at stool when there is no fecal matter in the rectum, but only a swollen membrane; may show, indeed, a lack of intelligent discrimination in many of my acts; but you may rely upon one thing: I am faithful at my post from one end of life to the other, and am responsible for every type of spontaneous bodily activity, and without my influence the rest of the composite man is perfectly helpless. Consequently when things are wrong in our family, whatever doctor takes us in charge would find it to his best interests to take me into his confidence and make use of my influence in the family counsels if he hopes to be successful in the practice of medicine.

Now, my dear friends, I am afraid that I have been so full of my own importance that I have dealt too much in vague generalities and not confined myself as much as perhaps I should to the plain, unvarnished description of my anatomy and physiology. As I think back over the remarks which I am just completing I do not remember having told you anything of my plexuses and the nature of my nerves, how they differ from those of the cerebro-spinal man, and I have not mentioned the fact that I supply the sexual system and all forms of erectile tissue, and—my! what a theme for consideration and how ignored, neglected, overlooked, more's the pity. But my time is up, so hands off for to-day. But I will say right here that the opportunity for addressing you seemed so brief, and the importance of what I had to say seemed to me so great, that I was just too full for utterance, and so probably have sort of overflowed my subject rather than attended strictly and methodically to

business. I hope I have not done so to such an extent, however, that I have failed to furnish you with some slight compensation for your kind presence and attention.

You may think from my remarks that the last of our family of shapes has been heard from, and that your next entertainment will be furnished by the composite man himself. But let me correct you. We have three more brothers who are vet to be heard from. Two of them, our ghostly men, the conscious and the sub-conscious men, have been referred to, and you perhaps looked for their appearance; but the third one has not yet been mentioned in your presence, and will be the next one to address you. Let me call him the organic man. In him you will meet a shape that will appeal to you as belonging in part to the more pronounced physical forms who have already addressed you, and in part deserves to be classed with our ghostly brothers. But I shall offer no further words of introduction for our organic brother, preferring to leave him to do his own talking. I would like to say this much, however, that if he comes anywhere near doing himself justice, what he has to say will be well worthy of your attention. The organic man will be your next entertainer.

Asking your pardon for the undue length of my remarks, and for whatever in them may have seemed to you vague and indefinite, and hoping to have the privilege of meeting you again and having another opportunity to show you a better consideration and to do better justice to myself, I respectfully take leave of you for the present.







THE LIVER MAN.

# IMPERSONATION No. 11.

THE ORGANIC MAN.

## LADIES AND GENTLEMEN:

I am conscious of appearing before you in the guise of a perfect stranger. I presume you did not know that I even existed. As you are honest I am sure you will own that this is the truth. But I really do exist, or I would not be here. I am sure you will know me better after I have told you my story, and if you will kindly permit me to have your attention for a short time I believe that I can easily make you reconciled to the conception that there really exists an organic man, or, to put it more exactly, a large number of organic men, as many organic men indeed as there are organs in the human body. It may seem a little far-fetched to you at first to claim that every organ in the body is coextensive with the body itself, and therefore possessed of such a perfect human shape as to entitle it to vour consideration as one of the members of our composite family. But such is really the case. As you know, there are a good many organs in the human body, and as every one of them is a full-grown man in all its perfection of form the composite man, who is supposed to blend all the various human forms into one grand being built in the image of his maker, and who is to be known as the composite man, and who will be the last of our family to address you, is indeed a conglomeration of shapes more numerous than one would on first thought deem possible. I think I hear you say at once, "What! is there a stomach man? is there a lung man? is there a spleen man? is there a liver man? is there a kidney man? is there a pancreatic man? and a salivary man? and a glandular man? and every other kind of man that is represented by an integral bodily organ?" But do not be uneasy, for although this is in reality the case you will not be called upon to attend to so long drawn out a story as their separate personal reports would of . necessity make, for as the composite man, who is to be your final entertainer, will address you in behalf of our entire family, so do I come before you as a representative of the various organic men

who are anxious to be heard by the same audience who have listened to the story of the various forms which have appeared before you.

I am not the composite man, but you may if you like call me the composite organic man, inasmuch as I shall present one common report for all the organs, having myself no real existence outside of the various organic shapes that enter into my make-up. I am not the lung man, I am not the heart man, I am not the kidney man, I am not the spleen man, I am not the liver man, nor any other of the individual organic men, but I am all of these combined and come before you as their sum and substance to tell such a plain story of the human existence of every one of the organs, even to the extent of constituting a complete human form, that each one of the various organic men will feel that what I have to say will do for him.

Now, many times you know when description proves to be difficult and one's meaning is hard to express in formulated language, it is more satisfactory to both audience and speaker to speak in parables; in other words, to explain how things are by means of well selected illustrations. My own task appears to me so difficult that I feel almost compelled to resort to this ancient method of explanation in order to be at all sure that I can give satisfactory expression to what I am expected to say to you. So you will kindly overlook in my talk what at first may seem irrelevant and wandering, for I think if you will put all my illustrations together, in the end you will be able to completely comprehend my meaning and understand why I deem it important that the organic man should be recognized as a composite human shape and have equal privileges with the other human shapes, ten of whom have already addressed you and some few of whom are yet to be heard from. I realize at once that the hardest part of my task will be to make it plain to you that every organ of the body is as large as the body, and hence possessed of a complete human form. So, if you please, we will give this matter our immediate consideration.

Now will you kindly tell me what is the measure of man? Is it merely that of a being so many feet and inches in height, of such and such girth, of such and such weight, and such and such proportions; or does a man extend as far as his feelings influence to action and his thoughts give such action form? It goes without saying that whatever issues from a body partakes of its quality. In this way in the great universe of which we are so small a part a sunbeam tells of the sun and every created thing stands for some quality

in the universal creator, and in our small individual life do we not find the same principle universally prevailing? Has not every being his characteristic voice, gait, language, and emanations of all kinds? How could a bloodhound track a fleeing fugitive, or a dog scent game, or a detective identify handwriting or footsteps or any form of physical expression upon the part of a human being, if individuality was not stamped indelibly upon everything which issued from it? A school most certainly leaves its stamp upon every scholar who attends it; but what is the school but the combined influence of its scholars? The spirit of a town may enter into every one of its inhabitants and influence them to enterprise or leisure, to culture or shiftlessness, to drunkenness or sobriety, to any quality that it stands for; but what is a town other than the sum total of its inhabitants? For while the quality of the town as a whole unquestionably imprints itself indelibly upon every inhabitant which it contains there is not an inhabitant of any town so insignificant as to escape the responsibility of contributing his share, whatever it may be, to the general town quality. All this is but another way of reminding you that while the whole of anything is invariably made up of its parts, on the other hand the various parts enter into the formation of the whole. How could a baby boss the whole house if it was not as big as the house? How could pepper and salt and curry and other seasoning and flavoring agents be tasted in a teaspoonful of soup if they did not permeate every particle of it and possess a form coextensive with the liquid itself? And yet none of these ingredients in its solid form would make much of a showing in comparison with the size of the bowl whose contents it so successfully flavored. To sight and touch, or in other words, to a part of sense perception, they appear to occupy but an insignificant part of space filled with the broth, but the smell and taste, one or both, give evidence of a larger form, so large indeed. as to be coextensive with the liquid to which they give flavor.

I wonder if these brief but pointed illustrations are not sufficient to help you understand the sense in which I present for your consideration as many organic men as there are bodily organs? If every inhabitant of a town exercises an influence as wide as the town he is in a sense most certainly as big as the town. If a scholar wields an influence that permeates the entire school to which he belongs he is certainly as big as the school. If an organ wields an influence coextensive with the human body that organ is certainly entitled to a recognition as a human being, as tall, as broad, as well and completely proportioned in every part as all the other individual forms

whose claim to recognition has no better basis than his own, except perhaps that his existence appeals less perfectly to mere sensation, although just as perfectly to perception. The real question at issue is merely this: Must forms necessarily be sensed? Are those forms less real whose existence can be established only by perception? We measure air, and oxygen, and other gases in cubic feet, the power of electricity by volts, and why may not other forces enjoy the same privilege? And if an organ wields an influence coextensive with the body why may we not allow it the privilege of being considered a bodily shape?

Now, my dear friends, the next of our brotherhood to address vou will be the brother known as the conscious man, and after him you will listen to some remarks by another of our shapes known as the sub-conscious man. Neither of these two brothers will appear before you in what is known as tangible form. Their existence is not cognizable by any of the physical senses, and yet I think before they have done with you that they will convince you most thoroughly not only of their existence but their shapely existence. If these brothers of ours did not possess organs and have forms not a single one of the various human forms who have already addressed you could by any possibility of means ever have taken on human shape. If these two ghosts of our brotherhood of shapes are to be permitted to address you in the capacity of human forms, I can see no just reason why the same privilege should be denied the organic man, for his claim to formship is certainly much easier established than is that of either the conscious or sub-conscious man, because every organ in the body is possessed of definite physical attributes amply sufficient to establish its identity as an organ, and it is by no means a difficult task to prove that the influence of every organ of the body is coextensive with the body itself. If you permit an odor to be considered as a part of the flower from which it emanates, if you permit light to belong to a lamp, if you permit sound to belong to a musical instrument, you must in all reason permit lungs, for instance, to be considered as extensive as the influence of the breath, and the kidneys and liver and spleen and pancreas and all other organs to be as large as the area of the bodily effect which is under their control. The world is generous in its interpretation of words. It permits the form of a word to contain various grades in meaning, ranging everywhere from the seen to the unseen; indeed there is scarce a word employed by intelligent beings that has not a soul as well as a body, that cannot be used for purposes of communication in the world of thought as well as in the world of matter, that does not stand for an interior as well as an exterior form of truth. Indeed outer symbols, words, and signs, are valuable to us only as they will hold the genuine wine of life in the shape of some interior meaning which is expected to be extracted by all those who drink deep enough to live.

But, ladies and gentlemen, I feel that I am trespassing upon the two ghosts, the conscious and sub-conscious men, who are so soon to follow me with their own impersonations, and I trust that I have gone far enough with my illustrations for present purposes, and that you will be able to perceive from what I have already said the grounds upon which the various organs of the body base their right to be registered as human beings. It may be well, however, before leaving the subject entirely to drop generalities, leaving them for the abler speakers who are to follow, and endeavor to make my meaning still plainer by presenting you with a single organic form, after which perhaps it will be a simpler matter for you to understand how every organ in the body is entitled to recognition as a complete human shape, for the remarks which I make in behalf of the organic man, whose airy shape I may try to define for you, will apply equally well to all the other organic shapes who demand recognition as such.

Permit me to select the lung man as the organic form, of whose existence as a perfect human shape I hope to convince you. It will then go without saying that as there is a lung man there is also a kidney man, and liver man, and as many other men as there are organs.

Now, the lungs, you know, are confined, so far as their visible forms are concerned, to the cavity of the chest, having definite limited boundaries so far as appearances go, and yet reaching in their influence the remotest parts of the human body. I am sure that you did not question the claims of the arterial man when he told you of his fair and comprehensive proportions. He permeated the skin, he went out into the muscles, he penetrated the bones, he ramified throughout the areolar man everywhere, and attracted your attention to his eyes, ears, nose, mouth, heart, lungs, liver, and various other organs through which he circulated, and in such a complete manner as to take on most perfectly the physical form of every organ and tissue in the entire body, so that when he spoke of himself as the arterial man you must have at once recognized the justice of his claim. I want to tell you right here that the arterial man never carried a drop of blood upon which the lungs had not breathed the breath of life. The bright red color of the entire arterial stream was due to oxygen supplied almost entirely by the lungs, a small amount only being supplied by the skin man. You must admit therefore, without further argument that the lung product at least reached out into every part of the human body and was coextensive with the composite man which stands for all of us. There is not an organ or tissue belonging to any of our brotherhood of shapes that is not dependent for its supply of the vitalizing agent known as oxygen upon the action of the lungs. In addition to this the lungs serve as a smokestack out of which the carbonic acid gas which results from universal bodily decomposition is emitted with every expiration. If this outflow of carbonic acid gas was stayed but for the space of a few minutes there is not an organ or tissue of the body that would not be strangled to death. Every part of the entire body, therefore, which lives must breathe, that is to say, must receive oxygen and be able to unload its carbonic acid gas. And if every organ and tissue of the body is not possessed of lungs they certainly act as though they were, for the interchange of health-giving and death-dealing gases is coextensive with every one and all of the bodily forms. It seems to me that in reality no further argument is necessary to prove that there is such a thing as a lung man, with form and proportion coextensive with the most perfect of human shapes. But there is another argument which may be used if necessary to substantiate the same fact, and that is the wonderful and universal influence wielded throughout the bodily domain by the great lung pump, as the organs of respiration may well be called. When the diaphragm is lowered and the ribs are raised and the capacity of the chest is thereby increased, a large vacuum is formed which serves as a suction pump for the entrance of the air. But this statement by no means tells the whole story. The influence of this suction is felt not alone upon the volume of air but is appreciated with equal force in every branch and twig of the venous man, whose muscular coats would be inadequate to their duty of returning the blood from the peripheral tissues to the heart if they were not aided by the suction power of inspiration. If you have never done so, the first chance you get place your finger upon the anterior fontanelle of a baby in arms and note how it rises and falls to the action of the lungs. In inspiration the fontanelle recedes, and in expiration it bulges, and this action continues throughout life, although after the bones of the skull are perfectly formed of course the brain contraction and expansion, which is being kept up just the same, is not so readily observable. Now what you are able to note with reference to the baby's brain by watching the rising

and falling of its anterior fontanelle is equally true of its extremities and trunk and all they contain. Inspirations pump blood from the feet and hands, and skin and bones, and liver and spinal cord, and all other parts of the body just as they do from the brain; and expiration permits them to become filled up again in readiness for a repetition of the process. There is no part of the human body so remote, so inactive, so dead, as to be insensible to the rhythmic action of respiration. Without it indeed all bodily circulations of liquids and gases would speedily cease. Respiration, then, is a function coextensive with the living human form. When a form ceases breathing it at the same time ceases living and is dead. Why, we even speak of the size of a vacuum, and inasmuch as the lungs stand not only for the oxygen supplied by them but also for the vacuum supply of the body, why must not its just measurement be recognized as being identical with that of all the bodily shapes which it so perpetually and rhythmically exhausts and fills up? The breath, indeed, stands for the ebb and flow of life and all its shades of quantity and quality, from the sigh of love to the gasp of fear, from the rapid, panting, and shallow breath of the excited to the slow, deep and regular breathing of the absent-minded and reflective. The hurrying and slowing of respiration, the shallowness and the depth of it, respond to our various emotional states so perfectly as to transmit our every temper to the remotest recesses of every type of bodily structure. As lungs therefore touch the tissues everywhere not only by the products of their function but also by their rhythm, I appeal to you as an unprejudiced audience to grant me the justice of my claim that the true measurement of the lungs in all their dimensions is identical with that of every bodily form that has appeared before you, or is yet to have that pleasure. In a manner less obtrusive, but at the same time as easily presented and readily understood, can every organ of our common form claim to be coextensive in its sphere of influence with every other human form, and therefore be entitled to a hearing in your presence as one of our brotherhood of bodily shapes. There is, then, not only a lung man but a kidney man, a liver man, a splenic man, a salivary man, a pancreatic man, and so on to the end of the chapter.

My main object in calling your attention to the existence of the organic man in his multitude of types is to perpetuate the important conception of the oneness of the human form divine. A healthy human being is characterized by the entire absence of all self-consciousness of his various parts, and when an eye, an ear, a throat, a lung, a heart, a back, a foot, a hand, a skin, a stomach, or any other

tissue or organ makes itself conspicuous by any type of self-consciousness it is in disorder and needs readjusting to its proper rhythm in the general harmony of the human organization. The specialist that does not recognize in his work this interdependence of the various bodily forms is inadequate to his calling and unworthy of patronage. It is all right for a professional man to confine his attention to the consideration of the eye, or ear, or nose, or throat, or heart, or lungs, or kidneys, or sexual system, or any other integral part of the human body, but in doing so he is in honor bound to constantly bear in mind the great fact that whereas the part in which he is especially interested wields an influence coextensive with the body, at the same time it is subject to a return influence from the combined organism of which it is but a part.

But my present purpose is not to cast reflections or to point a moral, but simply to remind you that as every brick in the construction of a house is essential to the symmetry and support of the entire house, so every organ in the human body is essential to the entire body, and therefore coextensive with it in size and shape. My plea has been for the recognition of the existence of the organic man, or rather of the organic men, as distinct, full sized, and amply proportioned bodily shapes; and if you think my position is a strained one or that my arguments are weak and far-fetched, I wonder what you will conclude when you are addressed by that wonderful brother of ours, the conscious man, who is the next member of our composite family to address you. The parts which I stand for may not appeal to all your senses, but his form would appeal to none of them, and yet he is by no means formless or indefinite in his proportions, but a veritable human reality, as I hope he may be able to prove to you. Speaking as one of the coarser types of human forms well known as material shapes, I can assure you that in our family counsels the conscious man is an all important member, and none of us could exist without him. But as he is amply able to speak in his own behalf I will say no more.

The conscious man will be your next entertainer.





THE CONSCIOUS MAN.

## IMPERSONATION No. 12.

#### THE CONSCIOUS MAN.

### LADIES AND GENTLEMEN:

At last I have the pleasure of appearing before you and fulfilling my promise to entertain you with a brief impersonation, and now that I have really undertaken the task I find that it is by no means a simple one and if I do not succeed in making myself plainly understood you will please be charitable in your criticisms, as in addressing you I have difficulties to overcome which did not beset those of my brother shapes who have already spoken to you and which are only possessed by one other member of our family, namely, the subconscious man, who is to follow me as your entertainer, and who will probably find himself equally embarrassed when he comes to make an attempt at an impersonation in your presence.

Like my preceding brothers of your acquaintance, I am indeed a human form, more perfect than any of them, and yet I am wholly unable to demonstrate this by an appeal to your physical senses. Fortunately, however, I think I can convince you that I do exist as a human shape, if you will permit me to make use of your reasoning faculties; and as logic is said to be truer than fact, my existence may impress itself upon you even more forcibly than if I were compelled to rely upon sense perception for proof. These fellows who have paraded themselves before you as such consequential shapes, my illustrious physical brothers, are all right as far as they go. I have no criticisms to make upon their impersonations, and yet without my remarks and those of my subconscious brother who is to follow, the composite man, who comprehends us all, and who will be the last to address you, would be but a lifeless piece of clay and wholly incapable of speaking for himself or anybody else.

Ladies and Gentlemen: Allow me to inform you that I am the soul of the cerebro-spinal nervous system, and through him it has been possible for me to infuse life into the rest of the family. Inwardly I am joined to my subconscious brother, through whom all the life for which I stand is filtered, and outwardly I am variously

projected into the physical shapes with all of whom you are now more or less thoroughly acquainted. I am the conscious life of the entire body, and not one of my material brothers is endowed with personal consciousness and activity except by me. I mean to say that the life of the bony man, the muscular man, the arterial man, the venous man, the areolar man, and indeed all the physical men, so far as consciousness goes, is mine and mine alone. Not one of them can feel or exhibit the slightest form of conscious activity except as my animating spirit pervades him and enables him to do so. An eye is blind, an ear is deaf, a tongue is silent, a nose is insensible to odors, a skin is unable to register touch, except by my conscious presence and activity. All these physical fellows who have spoken to you are possessed of conscious existence through me, and whenever I move out of their shapes I can tell you it is a dark day for any and every one of them. All their conscious personality, their physical pride and manliness, their existence, indeed, is wiped out, and their forms are speedily dissipated. Without me they are wholly unable to sense any part of this material world in which they have taken root and grown up. They are thoughtless, will-less, emotionless and senseless, and I leave it to you if that does not leave them pretty nearly devoid of physical existence, as very soon after my departure from them, which is liable to occur at any moment, they become perfectly shapeless and cease to exist as human forms, the elements of which their outward clothing was made being speedily taken up by lower forms and made into new garments for succeeding forms of vitality.

They could not find food with which to build their shapes, or to keep them in repair, if it were not for me. They might be never so thirsty, but could not make a move to obtain liquids, or recognize them when they did obtain them, if it were not for me. They could not avoid destructive agencies, or take advantage of constructive ones, if it were not for me. They could not take a step, or lift a hand, or move a voluntary muscle, if I did not furnish them with motive power. And, indeed, in every conscious way, they are because I am.

You, of course, know that every organ of the body, from muscle to brain cell, is brought to its development by exercise, but, my dear friends, please recognize that it is I who accomplish the exercising. I register all of the impressions received by the various organs of the body and dominate the body policy. Indeed, I stand for the entire bodily consciousness, and without me there could be no unity of

action or operation among the various members of our family, and therefore our family existence would be an impossibility.

It may be that some of my audience, while recognizing the fact that there was such a thing as a conscious man, have supposed that he was rather a small member of the family and confined to the nervous centers, and if you wanted to find him you would have to seek him in the brain or spinal cord. But it is my pleasant duty to disabuse you of that inadequate conception, and remind you that every cell of all the physical men who have addressed you, in order to be of any service whatever to the human family of shapes, must have within it the spark of conscious life, and that cell-death is always followed by cell-burial, cell-funeral and cell-expulsion, for the remains of every dead cell is swept up by the bodily scavenger and hurried on into one or more of the four funeral trains of the body—the sweat, the breath, the alvine current and the urine—and thus carried away from the bodily presence in order to make room for vitalized material. You will readily understand, therefore, that if I am the vitalizing agent for the entire family of human shapes, you will find me present not only in the nerve centers of the brain and spinal cord, but also in every part and particle of the living tissues of every animate human form. Therefore, my shape is coextensive with that not only of any one of my brothers, but of all of my brothers. I am in them all and permeate them all, infuse life into them all from center to circumference; and if you have any dealings whatever with any of the human forms while they are still connected with a living, active human being, you will have to deal with me, for you will find me anywhere and everywhere throughout the entire human existence wherever cells are living.

It will be necessary, my dear friends, before you go on very far with any form of scientific studies that are at all practical, for you to realize that exterior things imply interior ones; that indeed there is no such thing as an outward physical shape that is not accurately molded upon an interior shape, which is its indwelling essence and explanation, and which must have form in order to create form and sustain form.

Permit me an illustration which perhaps will serve to make my meaning plainer. Take a house for instance; it is perfectly impossible to build one without first conceiving one. A foundation could not be laid without first determining how large, how deep, how broad, and of what shape and material it is to be constructed. Not a

single part of the superstructure could rise from its foundations except as it carried out in minute detail a definite previously formed conception. A carpenter could not saw a board or drive a nail without the precision of pre-existing intention. A plumber, a stonemason, a mechanic of any kind would be perfectly helpless unless he was told what to do and knew how to do it. Indeed a physical construction of any kind is perfectly impossible except as it is the embodiment of an unseen mental construction which invariably acts as a causative factor. How, then, could a house ever take shape with its definite proportions of walls and rooms, doors and windows, closets and roof, and all the other parts, without in the first place a desire for such construction, and in the second place a molding intelligence for the execution of the desire?

Every physical house, therefore, owes its existence to a preexisting and definitely shaped spiritual house, and invariably stands for what somebody has wanted and what somebody has thought.

Usher me into any of the habitations of men, and by what they have done and built and crystallized into physical shape, I will tell you how they have felt and what they have thought, and find adequate explanations for the physical unit.

There are physical forms, then, simply because there are spiritual forms to explain them. All thought forms are not by any means carried out, as by far the great mass of our dreams and intentions and conceptions are wholly unable to find expression, but there is nothing ever carried out and crystallized into physical shape through the agency of man that does not stand for a definite purpose and a definite conception welded together into such definite shape and intensity of purpose as to explain most completely its existence. This linking of the outside of things with the inside, this shaping of the outward constructions by the inward conceptions and intentions, the former of which are but projections into the world of conscious observation, while the latter belong to the realm of the unsensed, all result from the operation of laws which, while they are manipulated by man, are laws of the eternal creation which has the Creator of all things for its sun and center. The temporal homes, then, the playhouses of men, are constructed after the same fashion in which the God-created forms of physical expression are brought about by the Creator himself. The human form divine is likewise shaped from within, for standing as it does as a result of a God-impulse conjoined with a God-thought, the fact that it has outward shape and definite material proportions proves beyond controversy that its unseen part, its inspiration, its soul, its animating purpose, was not formless and indefinite, but equally shapely and well defined in all the minute details of a well formed concept furnished by an inspiring love running into molds of a well defined and accurately molded intelligence.

My friends, you can be well assured that if I had been formless my brother physical shapes would never have known how to grow, nor when to stop growing. Imagine living matter, undirected, undertaking the task of constructing a human body. The attempt would certainly be ludicrous, for all our conceptions of symmetry and the proper proportions of the well established forms of things would most certainly be perpetually violated. If there were legs, some would be longer than the longest and shorter than the shortest; arms would be stouter than the strongest and weaker than the weakest; stomachs larger than the largest and smaller than the smallest; lungs more capacious than any hitherto known and others forgotten in the make-up. With no definite mold to be cast about there would be bigger heads than ever have been known and smaller ones than could be conceived of; human ears longer than mules' and shorter than apes'; mouths like a whale's and sometimes no mouths at all, and squint would be commoner than now. Even as it is there are the coccyx and appendix and a few other hints of shapes as they used to be, but these are scarcely worthy of mention in comparison with the anomalies and eccentricities of shape that would characterize every part of the human construction if there were not an interior mold of definite shape and proportion about which to nicely wrap the physical clothings of time.

I am not saying that I stand for the interior, unseen human form that is responsible for the human type. You must hear what my subconscious brother has to say on the subject. I simply stand before you as the conscious man that wills and thinks, and senses and remembers, and that acts in reality as a go-between between my inspirational brother, who is life itself, and the outside clay which I wrap about me for my purposes of life.

Not an eye which belongs to any one of my physical brothers can see a thing; I do the seeing. Not an ear of our material brother-hood can register a single sound; I do the registering. Not an odor is recognized by any of the physical noses; the sense of smell belongs to me; I alone am the conscious smeller. When doctors prescribe, their drugs are right up to me. Not a sensation of any kind can be taken into account by any one of my physical brothers who have been

permitted to present you with their impersonations; all that function is peculiarly my own. Because I feel, and because I think, they are what they are. I pay my allegiance to my subconscious brother, through whom comes my inspiration, but I claim dominion over all the human forms that stalk the earth and pitch their tents on the shores of time. As my business is to look out into the world through the organs of self-consciousness and take in the appearances of passing events, I am prone to be moved by them, and am frequently possessed of impressions and notions which I am compelled to repeatedly correct and modify as my subconscious brother initiates me deeper and deeper into the realm of realities. I submit for his consideration the great multitude of facts which my powers of observation are constantly accumulating, and look to him for guidance when I come to unraveling the deeper meanings of things as they are spelled out by the passing panorama of my varied earthly experiences. With my senses all reaching out into the material world, and my inspiration furnished by my subconscious brother, I stand before you as the most perfect human shape that you have yet met, the Conscious Person, the I Am, and sincerely hope that I have impressed you with the fact that while all my brothers are possessed of the forms of ears, mine are the ears; while they all have the forms of eves, my eyes are the ones that see; while they have displayed all the bodily organs before your conscious observation as proof of the fact that they are possessed of bodily organs so far as heard from, my organs are the organs of organs, and my form the form of forms. You have never sensed electricity; you have simply observed some of the physical phenomena of its outward expression. You have never sensed gravity, but you know what it does. You have never been able to perceive by your physical senses a thought, and vet I am sure you are satisfied that thought forms exist and are responsible for the outward shapes which we are able to detect by sense perception. In just the same way, perhaps, you will be able to realize that my organs, although they cannot be demonstrated by instruments of dissection, by the microscope or by chemicals, nevertheless have definite shapes and are in reality the organs of the human body, and that my form is the form around which all the others are molded and from which they take their shapes. I have made my brother shapes, and by what they are you can judge of what I am.

In some mysterious manner at the close of every day my faculties seem folded and my proud consciousness is laid to rest. After all my days are done and the physical shapes of my brother men, which my thought and will have perpetually animated and kept in conscious existence, are no longer a fit habitation for my indwelling, and so must respectively return to the elements out of which they were constructed, my existence so far as this world is concerned seems to all appearances to have reached a sleep so deep that it does not waken in this world with the dawning of succeeding days. Whether or not my form, too, disintegrates after the manner of my brother physical shapes whose impersonations have already been presented to you is not a question for the present occasion. My present purpose is accomplished when I have presented to you the fact that so far as you have yet heard from our family I am the conscious life of them all. My shape is that of the human form divine, and is more perfect in all its proportions and details of construction than any of my brothers who have addressed you, and I recognize no superior in shape or function in our united brotherhood of human forms except in the person of my subconscious brother, who will act as your next impersonator. He will perhaps take a little of the wind out of my sails and prick my bump of conceit until it collapses. Nevertheless, being older and more influential than my predecessors upon this platform, you will perhaps pardon me for the apparently self-assertive tone and consequential bearing of my remarks on the present occasion.

I hope you are not more interested in a noise than you are in what makes the noise, in a picture than in the painter, in a form than in the thing, in the material shapes of my brother forms than in the inspiring, although unsensed, organization which explains their existence. I sincerely hope you are too sensible to be more taken up with the husks of things than you are with the kernel. Let undertakers care for the dead bodies. What you want to know about, although possibly you have not realized it before, is the real person, and so far as heard from I am that person. I have nothing against my brother shapes. I made them. I am proud of them. I have no disposition to belittle them or to make light of their importance. They have been faithful servants to me during my journey through time; but they do not live always, and, between you and me, I think that I do.

After my subconscious brother has presented you with his impersonation you may think that I have gone a little too far in claiming responsibility for the shaping of the various members of our family; but there is one direction in which I cannot claim too much, and that is, that I am in reality the brains of the family, and as such am the sole director of whatever sentiments prevail in our family. I

settle its politics, its religion, dictate its line of education, foster all its hopes and fears. Of course, this makes me also responsible for its mistakes and shortcomings, and if the love of power, which is my great temptation, was at all inclined to make me conceited, my repeated errors of judgment would make me stand corrected. I know that I fill our whole family with terror and put them on the run when there is nothing to be afraid of, and I ought to make them stand their ground. I know that I frequently paralyze them with hesitation and doubt and skepticism when I ought to imbue them with courage and hope and trust. I know that I am too frequently moved by what they tell me of the outside appearances of things, when my inner ear, if it were only open as it ought to be to the inspirational whisperings of my subconscious brother, would teach me better.

Sometimes I am foolish enough to conceive myself a God instead of realizing that I am but a child of God, for whom there is but one appropriate attitude—that of teachableness.

By my influence over the respiration and circulation I can dominate to a great extent all the bodily functions, and if I were only wise enough I would always act as their protector, preserver and defender. But in my moments of shortsightedness and conceit I commit such grievous errors that I much fear that by good rights I should be held responsible for many of the types of chronic disease and for the premature decay and death of our entire family which is so common as to be almost universal.

I am well aware that the medical profession as a whole does not indorse these sentiments and will attribute this confession to a morbid self-consciousness. But they have been so busy with their chemicals, their microscopes and dissecting knives and physical appliances and measures of various kinds, that they are still too materialistic in their propensities to have gone very far in their appreciation of the ultimate causes of the great issues of life and death; and if they were inclined to listen to some of the confessions I might make, and which perhaps I may make on some future occasion, they might learn something to their advantage as to the etiology of disease, and increase their appreciation of the part which interior forces play in the history of their material projections. But medical men are still very busy with their physical science and do not seem quite ready yet to be initiated into the deeper and more advanced studies of their art. Doctors are good fellows, and will get on in time, and you people must be a little patient with them.

The better they do their kindergarten work the more thorough will they be with their higher studies when they come to them. In the meantime I shall go right on doing the best I can with the aches and pains into which by my poor philosophy and bad judgment I repeatedly plunge my fellow shapes of the material sphere, thanking the material doctors for their help in covering up the errors of my ways, and praying for guidance into such right living that my family in time will not be called upon to suffer physical disease as the result of my ignorance and indiscretion. It is easy on me when an unknown fellow called disease gets blamed for what I do. I don't believe I am quite as conceited as I used to be, and as I get older I am conscious of paying better heed to the interior promptings which reach me from my subconscious brother. He needs me as the only avenue by which he can reach our family of material shapes. This he has always known. I need him as the source from which I draw all my inspiration and life, and at last I am beginning to find it out. If the time ever comes when my inner subconscious brother and myself work harmoniously the suffering for the rest of the family will come to an end.

Thank you for your kind consideration and attention. There is much more I would like to say to you, but enough for the present. You will hear my subconscious brother next, and as he is really the fountain-head of our family, I know you will give him a hearty welcome. Good-by.







THE SUB-CONSCIOUS MAN,

## IMPERSONATION No. 13.

THE SUB-CONSCIOUS MAN.

## LADIES AND GENTLEMEN:

I sincerely hope that the impersonation of my brother, the conscious man, was satisfactory to you, and that he succeeded in making it clear to your comprehension that although himself completely hidden from all sense-perception, nevertheless his is the personality that is really responsible for every possible activity of all the senses, and he is possessed of a human shape and is thoroughly entitled to membership in the family of shapes which go to make up the composite man. For if he, with all his self-assertive consciousness, was not able to impress you with his personality there will be small prospect of my posing before you successfully as a human form, for I am a much ghostlier ghost than he is.

Why, he can see, and hear, and taste, and smell, and feel, and in this way make himself aware of the passing panorama of events in the physical world; but these privileges are denied me, and I know nothing of the outside world except as he tells me of it. I have some knowledge of interior things of which my conscious brother knows nothing, except as he is made aware of it by the fact that the composite man, in which he is such a leading spirit, confronts him very many times with a rival influence in the way of various interior impressions, wants, and desires which have to be settled with before united and harmonious action can be secured by our family of shapes in any direction whatever.

My conscious brother is rather inclined to be pretty loud-mouthed and opinionated in his views of things, but in spite of this the still, small voice that expresses my views from time to time, and oftentimes in his unwilling ears, is not without its influence, and things are pretty likely to go my way in the long run when it comes to a matter of rivalry between us. He does a good deal of sputtering and declaiming, and is full of self-assertion and braggadocio, but when it comes time to act he very frequently cools down and takes my advice rather than his own.

My conscious brother is the soul, or life-principle, which animates what is known as the cerebro-spinal man, whose nerve centers are in the brain and spinal cord, and whose nerve trunks extend from these centers to every part of the body. You have already listened to the impersonation of the cerebro-spinal man. He, my conscious brother, is all the time occupied with what I should call the outside world. His eyes are busy all day long, from morning till night, in looking into the faces of people and things and trying to figure out what meaning they stand for, and attempting to decipher, in fact, all the signs of the times as they file before him in one ceaseless, rapidly moving panorama, and the things that he don't see personally he endeavors to read about and imagine; but he is just as busy with his ears, and while his eyes are doing their best to comprehend everything which comes within their focus of observation, his ears are equally concerned with the sound waves of time.

If it is true, as Elmer Gates says, that the constant employment of a faculty, and especially in tests of increasing difficulty, insures a corresponding development of brain cells, what a bunch of brain cells my conscious brother must have the privilege of roaming around in in that part of the brain which registers sight waves and sound waves. There is a whole world full of things to look at, but just about as big a world full of things to listen to. Almost everything which approaches one comes with a noise of some kind. Even angels are said to approach with a rustle of wings that can be detected by sensitive ears. The vibrations of air that strike the tympanum are infinite in number and variety. Some are buzzing, some are whizzing, some are rumbling, while others are roaring, shouting, screaming, whispering, singing, rasping, soothing; and dear knows to what length a vocabulary would have to go to express the variety of sounds that the ear is expected to give heed to.

But while sight and sound demand a great deal of my conscious brother's attention, he seems to have some time to spare for the contemplation of things which he smells and tastes. Any well-educated man has obtained a great deal of his knowledge through these two faculties. Congenial tastes and smells are quite dear to his heart. In fact a man is quite frequently held in bondage by his nose when his freedom would be easily acquired if he were but deprived of the sense of smell. And the same is true of his palate. There is no keener chase in the race of physical life than that which men undergo for the flavors which delight their palates. And the reverse of these statements is also true. While pleasant odors can

stir into activity emotions which thrill the entire being with delight, disagreeable odors are equally capable of arousing feelings of repulsion, terror, and other forms of discomfort and distress, while the sensations of taste enjoy a like privilege. They can gratify and delight, or they can engender repugnance and kindred unwelcome emotions. The part which odors and flavors play in our personal history is by no means sufficiently appreciated, but as this is not the proper time to give the subject further consideration, I must be satisfied for the present with merely calling your attention to this much neglected field of inquiry, and proceed with my theme.

Even more than taste and smell, perhaps, and almost equal to the senses of sight and sound, is that of touch. The blind and deaf can still feel their way, and the story of life as told by the sense of touch, if well written, would be a most fascinating history of physical sensation.

Now, although each one of these faculties requires constant attention, yet my brother, the conscious man, manages them all, takes cognizance of all the reports which they bring him, takes them into consideration, decides what disposition to make of them, and then executes his orders accordingly. If he finds things to his liking, he persuades the whole composite man to settle down and stay there as long as possible, this for the time being is his home.

Perhaps it has never occurred to you just what home is, but is it not merely a place of congeniality and of rest which comes from a sense of peace, happiness, and serenity? When the eye is so delighted with its prospect that it loves to dwell upon it, the ear so pleased with the harmony of sounds about it that it loves to continue to listen, when the odors are delightfully fragrant, and the taste and sense of touch are likewise satisfied; when all these various physical gratifications are experienced in the same place and at the same time, genuine home life is attained so far as it is possible in this earthly camping-ground. It is here that our satisfied spirits label everything in its environment the endearing name of "home." It is the home; everything looks like home, tastes like home, smells like home, feels like home, and has the home table, all together making a home symphony the memory of whose music gladdens many a weary hour after the home is broken up and the wanderer becomes footsore and oftentimes discouraged in his search for another combination of physical delights sufficiently restful and satisfying to entitle it to wear the "home" door-plate.

Dissatisfaction and unrest can speedily annihilate the home

sensation and sentiment. As soon as an individual becomes dissatisfied with the reports which his senses bring him, something in the landscape offends him, something in the world of sound annoys him, something smells bad, or tastes bad, or feels bad, he picks up his belongings and moves on until congenial surroundings are again encountered, and his physical wanderings never cease until he is unable to go farther or he once more is ushered into a harmony of sensations.

Realizing this to be so, every man is perpetually striving to build up an earthly home life as perfect as possible, so that he may at least enjoy physical comfort for the present; and oftentimes he gets together such a happy combination of sense-producing agencies that his home is made so attractive that if he could have his way it would become his permanent abiding-place. But fortunately for his own good, his coming and going upon this material plane is out of his keeping, and all he can do is to make the best of whatever time is allowed him for his earthly stay, and he is not even told how long that will be.

I mention all these things to show you to what an extent my brother is employed in taking mere physical observations and managing physical matters. You see in order to run a consistent career he has to remember all the impressions he receives from the outside world and put them together so as to make a consistent story of life out of them; and he has not only to remember everything he senses, but to think it over, weigh it in the balance of his judgment, decide how much attention to give it, and act accordingly. In other words, he is perpetually ruminating upon the appearance of things and busying himself with the spectacular.

When all his faculties fail him, however, as they do in time, his eyes grow dim and his ears dull, and his other senses more or less blase, he then begins in dead earnestness to seize hold of the deeper problems of life with whose forms of activity he has been so much taken up. He is then to me more companionable. You see of myself I can neither see, hear, taste, smell, nor feel. I have no physical senses apart from my conscious brother, and I enjoy his companionship much more when he turns his observation inward and concerns himself with matters of the inner world rather than with their physical projections into the world of time.

I hope you remember somewhat of the impersonation of my brother, the sympathetic man, for, as he has told you, I am the animating spirit of his construction; and as he is the great body-builder, having furnished the emotions under which our entire family has been put into form, you can understand by what right I pose before you as the human form of forms. All the rest of the family are because I am. Even my conscious brother, who claims superiority to his fellow-shapes because he bosses them around a little and makes use of them, is a subject of my own creation.

If you want to name me, you can call me the universal I Want. If that does not satisfy you, call me love; or you may call me the book of life. If you want another name, you may know me as the soul. If still you are not satisfied, you may consider me as the life-principle. In order to establish my claim to kinship with the other human forms, I suppose I must go one step farther and suggest that as I am the life of the sympathetic man, whose existence as a human shape has already been sufficiently well established, and as there is no part of him which is not alive, the conclusion is very evident that his shape and mine are identical. There is no part of the sympathetic nerve which is not animated by my own principle of vitality. Indeed he is but a cup of life, while I am the life, though I can assure you his cup is full, and he would not be good for much if it were not. So, if you are able to conceive the shape of the sympathetic man, you can regard this form as identical with my own. This is in reality a very modest claim on my part, and does not quite do justice to myself, for in reality the sympathetic man does not contain all there is of me by any means, for I am not only in him, but all around him, and he is not by any means capable of containing my full self. But this subject of aura, or over-soul, which is trying to obtrude itself, had better be omitted in the present connection, all the point which I desire to make being that you will make no mistake in recognizing that I, the subconscious man, have definite proportions and shapely outlines entitling me to a just claim to membership in the family of shapes that go to make up the composite man. I am certainly the innermost shape of our family, for there is not one of them who is not a mere embodiment of some ideal of mine.

Let that suggest to you that I am the idealist of the family, and what they are and do is simply a carrying-out of conceptions that proceed from myself. Our family has never felt a want whose source was not myself, and it has never had an impulse that did not spring from me. It is from me that all the rest have sprung into being and served their time; and right here I want to call your attention to the fact that I have not done my conscious brother full justice in accusing him of being unduly enamored of the sights, and sounds,

and smells, and flavors, and sensations of this world, for throughout the collection of sense-producing subjects there is always a choice. One cannot see the light and the dark, nor hear the harmonies and the discords, nor smell the agreeable and the disagreeable, nor taste the pleasant and disgusting, nor feel the agreeable and the painful, in other words, give attention to opposites, at the same time; and as there is always both classes of sensations in existence, my brother always has a choice as to whether he will choose order or confusion, whether the things that lead to unhappiness, and as I supply him with the never-ending I Want, which is his sole stimulus of action, I really suppose I am personally responsible for the direction of his faculties, for his choice of what class of sensations he is to give heed to, register in his memory, and to permit to influence his activity.

There is a seeming inconsistency, however, in making this confession which will have to be explained. My own ideals of life are high. I love the truth, I love the beautiful, I love virtue, I love honesty, I love God and my neighbor and all that that involves; indeed I am of God and in reality godlike; and vet when the actions of my conscious brother are thoroughly analyzed I find that he is often accused, and not wrongfully, of acting directly opposite to these conceptions. He is frequently tempted to lie, to steal, to be otherwise than virtuous, to hate instead of love, and in many ways to pervert my good intentions. Now, I do not like to find fault with any of the members of cur happy family, and at the same time, being responsible for the course of life led by my conscious brother, and through his agency of the entire family of forms, I feel that the blame for the miscarrying of my intentions should fall in the right place, and it does not rest with me. Therefore, in order to clear my own reputation and that of the other innocent members of the family, it is necessary for me to carefully explain how it is that with the best of intentions on my part, and that too while I am responsible for the entire motive power of the body, the family seem to be frequently guided by wrong impulses, appetites and desires, to such an extent that the composite man is often said to be a great sinner, when in reality some one of our shapes is merely in an unfit condition for business. And what one of these shapes do you think it is that is responsible for the deviations of life? What one of our members do you think ought to be blamed for the impulses to cheat, to lie and to steal, and to hate, and to do other wrong things which hurt the reputation of the family and frequently visit upon us serious mischief of all kinds?

Please remember that my ideals are always straight and true and commendable, and the impulses which I furnish to the sympathetic man are as clean as the water which bubbles from a spring, or as the light which emanates from the sun.

I am very careful about the purity of the life-flow which I sent to my sympathetic brother, but oftentimes after it passes through me and into the other shapes, it does not appear like the same message which I issued to the family. I find that even the nutrition which he has to accomplish for all our family is many times poorly done, and that sometimes one member of the family suffers and sometimes others. I have known the bony man to develop tumors and inflammations and all sorts of troubles. I have known the skin man, and all the others of them, to grieve and get sick, each in his own peculiar way, and of course it is always the fault of the sympathetic man, as he is the family provider; and as I am the spirit which animates the sympathetic man, the trouble, by those who look far enough, is usually laid at my door, so that the monuments of pathology erected in various parts of the human body to sympathetic mistakes or inadequacy are usually interpreted by the more enlightened of human diagnosticians as telltale evidence of a sinful life on my part. I have been thinking wrong or feeling wrong, and consequently living wrong, and hence have visited disease upon my family instead of keeping them in a healthy state. I have suffered keenly from this injustice, for I have always been conscious of the cleanliness of my motives at all times and in all places, and I have long since wanted an opportunity to explain why it was that the composite man was troubled with so many wrong and wicked tendencies, moved by so many unhappy and unworthy emotions, entertaining so many incorrect, illogical and badly distorted thoughts, and as a consequence why chronic sickness for the whole family was so universally prevalent; and here at last is my opportunity to explain, and I want you to know right now that the trouble lies, not with myself, or with any any other member of the family other than my sympathetic brother, who is my particular physical embodiment.

It may seem to you a little cruel and uncalled-for for me, a member of our happy family, to stand here and claim that all the chronic illness which is visited upon any and all the various members of our composite shape is to be laid at the door of one of our number; and if this is so, why has he not been found out long ago and held responsible for the mischief which he has done?

As to this last point, why this great truth has not been com-

monly known for ages past, that is easy enough to explain, because doctors have been in the habit of basing their diagnoses to a great extent upon the testimony of the consciousness of their patients, and the patients are seldom conscious of the changes which have been wrought in their body by their subconscious part, and there has, therefore, been a universal tendency to simply deal with effects in a superficial manner, whereas the real causes of illness have remained untouched, undiscovered, and still in operation.

And then, too, doctors have not done enough thinking for themselves, but have been too menial in their deference to so-called authority. If you will chase this word "authority" down, I think you will find it would mostly be understood to mean a man who has occupied some public position or has written a big book, either one or both of these being enough in the minds of the average members of the medical profession to constitute him an authority upon the subjects upon which he treated, just as though books did not have to be rewritten and the mistakes of professors repeatedly corrected. But doctors have been illogical, and hence have not gone as far in their medical discoveries as they would have done if their brains had been freer or better trained.

I mean by that simply this, and I tell it to them right in their faces, and they can talk back if they want to, but my advice to them is to open their ears and keep their mouths closed, and see if what I am saving does not sink into their consciousness and awaken them to the truth of my accusations; there is not a medical college on the face of the earth that does not tell all about the voluntary muscles and the involuntary muscles, and how the voluntary muscles are supplied by the cerebro-spinal nervous system, and how the involuntary muscles are supplied by the sympathetic nerve. They describe very accurately the location of the involuntary muscles; they say that the involuntary muscles are found in the muscular coats of all the tubes of the body, surrounding the sweat and sebaceous glands, the entire alimentary canal from the mouth to the anus, and all its branches, including the salivary ducts, the ductus communis choledochus, pancreatic duct, and the various glands that are found along the entire length of the intestine; surrounding the bronchial tubes to their minutest ramification, surrounding the tubes of the ufrinary apparatus, the sexual apparatus, and supplying a coat for all the blood vessels and lymphatics. In other words, the involuntary muscles of the body have under their control the entire nutrition of the whole composite man. It is through their action that all supplies are brought and all waste carried away. It is said that all disease begins in blood stasis, or congestion, and it is weakness of the involuntary muscles that permits congestion to take place.

Now, this far doctors have gone, and everybody that is posted in medicine is perfectly familiar with these facts as stated. They also acknowledge when questioned, and seem to partially realize, that the sympathetic man is the one who furnishes the steam which runs the entire machinery of involuntary muscles. In other words, the nutrition and repair of the entire body really depend upon the sympathetic nerve which feeds and supplies all the involuntary muscles. Where they are illogical is right here; they have not gone any further than to admit these facts. They are not hunting for the waste and repair of the sympathetic nerve. Having the keys to the medical kingdom in their possession, they do not seem to have the sense to turn them and unlock the gate and look within. They know that sympathetic forces dominate and control the peristaltic action of the entire body, and that means the organic life of the body, the functions of the body, and all forms of bodily activity, and yet they do not go the important further step of looking to the waste and repair of the sympathetic nerve as the essential element to success in their efforts to either maintain or restore the equilibrium of life, which we know as health.

Here is where they are illogical and stupid to an extent that makes me out of patience with them. You see they admit that all our nutrition depends upon the sympathetic nerve, and consequently that all repairs of bodily waste must come through the same stimulating force, and yet they neglect to take the sympathetic nerve force into consideration when they come to treat the case. The sympathetic nerve fibers may be impinged and spending the vitality of the sympathetic nervous system in a most reckless and prodigal manner, but the fact will entirely escape their notice, for they do not seem to know enough to hunt for excuses of sympathetic nerve waste in cases of lowered vitality. They simply hunt for weak spots in the body generally, and ignore entirely the first cause of the weak spots.

But if I keep on expressing my feelings on this subject I shall get so warmed up that I shall forget to stop. And then, too, it is more or less of a digression and does not properly belong to this impersonation, so that although I would like to say more upon this subject, I do not feel at liberty to do so on the present occasion. You see these impersonations are not undertaken in the interest of any theory of health or disease, and no advantage of your attention is going to be

taken to demonstrate to you the important relationship between pelvic troubles and bodily vigor or reactive power; but I really wish to insist at this point that you stir up doctors to a realization of the lact that we do live by the sympathetic nerve, and that the first step to take in the cure of the sick is to know what constitutes sympathetic nerve waste; in the next place to know where this takes place; and in the next place to stop the waste, securing freedom of the nerve fibers from undue impingement and irritation; and in the last place to employ as curative measures such agencies as will restore sympathetic nerve power in order that the machinery of the body may have a sufficient supply of its own native steam with which to accomplish its purposes.

Here I am again wandering from my subject. It was a good dose for you, however, and I do not regret it at all; but you must forgive me if I have seemed to digress, and come back with me now to the reason why it is necessary to throw the whole blame of what goes wrong in our composite family upon our sympathetic brother.

I am particularly anxious to have his condition looked into, because he does not carry out the intentions which I pour into him true to my meaning; I mean good, and he makes me mean harm; I mean virtue, and he spurs the body into vice; I mean that our family should be truth-guided, and I send truthful messages, and he distorts my meaning into lies and urges our family into bypaths of mischief of all kinds; I mean honesty, and he interprets my message to our family to mean dishonesty, and so on to the end of the chapter. In other words, he seems to hear crooked. I talk as straight as I can and try to make my meaning plain. I understand what God and his angels want of me, and see my duty plain, and do it in a conscientious manner; but if you will sift the evidence carefully you will see that right in my sympathetic brother is where the transfer from light to darkness takes place, and here is where the mistakes of life are made.

Perhaps you will understand from his own impersonation how it is that he gets all tangled up and makes a lie out of the truth so many times. At any rate, I have not the liberty on the present occasion to take you into a detailed account of how it happens that my sympathetic brother ofttimes proves to be so imperfect an interpreter of life from me to the forms which I have created, so as frequently to guide them into directions which I am horror-stricken at their having taken. Now, mind you, I don't accuse my sympathetic brother of being dishonest or dishonorable, or doing anything out of the way which he can help. I simply say that ofttimes he does his work poorly, and

that when as a matter of observation it turns out that our family of shapes goes wrong, either individually or as a whole, taking the road to sickness and disease and death instead of keeping the straight and narrow path that leads to life and health eternal, we find that the forces which guided to the mischief had their beginnings in my sympathetic brother.

To many of you this rather severe calling to task of my sympathetic brother may seem not only uncalled-for, but rather unfeeling. for the simple reason that my sympathetic brother in his own impersonation confessed his fault and appealed to the medical profession to relieve his terminal fibers of embarrassment in order that he might be able to supply all the various organs of the body with their peculiar rhythm and in sufficient force to enable them to do their work as organs, well and conscientiously. In other words, he has said that sometimes he was inadequate to his task and wanted help. I have simply to say that there are those in the audience who did not hear my brother speak, and I owe something to them. And in the next place, my brother, like the rest of the family, is my own creation, and when I find fault with him I am simply finding fault with my own work, and I feel that it is my privilege to do so to any extent I choose. I know as well as you do that it is not right to be too hard on one's self. At the same time it must become a matter of universal knowledge just where in our family lies the mischief which permits so many of the human species to drag on in sickness, whereas they are created for the enjoyment of health during their earth life.

Now, if you doctors will take warning from the remarks of my sympathetic brother and myself, and see to it that there is no undue waste of sympathetic nerve force, and that no form of nerve impingement is permitted to vibrate any of the organs out of their accustomed rhythm, I think you will find yourself in possession of the key to carthly happiness for mankind, for I can assure you that every one of the human shapes is built on the models which I have furnished to our family, and the models are all right. All that is necessary to be done to secure a perfect composite man is that these models shall be accurately projected into physical shape.

But, my dear friends, I find myself at the end of the space allotted for my impersonation, and I must take my leave of you. You need not tell me that you are disappointed in my remarks. I can assure you that your disappointment cannot by any means equal my own; and yet, in justice to myself, I must confess to you that the task which I have undertaken has been no easy one, although it would

have been better performed had more adequate space been granted me.

I should like to institute a series of comparisons for your benefit between myself and my conscious brother, between our mental and emotional parts, our judgment, and various individual characteristics. He makes suggestions to me, and sometimes I take them and sometimes I don't, and I wish I had time to explain to you why I don't take in dead earnest everything he says. But of course you have heard about some people talking through their hats, to use a common phrase, and I am sure from this expression you can guess something that will not be far from the truth. He at times talks a good deal without saving much, and any suggestion of his that does not come from his heart and is insincere and not in dead earnest fails to touch me. Why, do you know that if I adopted all that fellow's fancies, he is so full of fear that he would visit all sorts of mischief upon our family a dozen times a day if he were permitted to do so. Sometimes he thinks we all have consumption; sometimes he thinks we have cancer; sometimes he thinks we have typhoid fever; sometimes he thinks we are going to die in a short time. Indeed, he is frequently fancying all sorts of things, and yet not always distressing ones. Sometimes instead of being pessimistic he is optimistic, and then his dreams are of the other kind. He gets too gay, too hopeful, too sure that what he liopes for will come to pass. He thinks our family is stronger than it is, can accomplish more than it can, and presumes on its strength, so that I have to call him down. You can see very quickly why it is that whereas I am open to suggestions from him it would be perfect folly for me in my everyday, steady job of body-building, if I should be compelled to listen to everything he talks into my ears. He does enough mischief with our family as it is with his waywardness, and if his influence were still greater I am afraid it would be harder on the family.

On the other hand, supposing my impulses and desires were not submitted to his judgment. I have just told you that owing to imperfections in our sympathetic brother, as they are voiced to the family they are not always what they should be, and if my conscious brother could not pass judgment upon the quality of the impulses and desires which well up within our united family I am afraid the wrong-doing of this world would be sadly increased.

Now, my brother, the conscious man, and myself are a pretty good pair, and we check one another, and encourage one another, and help one another, sometimes criticising and sometimes endorsing one another as best we can; and I think if we ever get doctors stirred up to understand that our sympathetic brother must be put in proper physical condition in order that my whisperings to the family may reach their destination straight, the time will come when we will lead pretty clean lives, and enjoy them, too.

If I had time I should elaborate for your consideration another idea which is by no means a common one, and yet as it is very important, perhaps you can give me your attention for just a few moments longer, so that I can epitomize it for you. It relates to the unity of the two nervous systems. There are no isolated nerve cells in either nervous system, and as they are in close communication with one another, trembling vibrations which bring messages to one cell are transmitted along avenues of communication to other cells, and so on until the entire nervous system is conscious of what every part of it is doing. So that in reality when it comes down to a correct estimate of things as they really are, there is no such thing as special sensations from without or special emotions from within. The talks to the family by my conscious brother, or messages to the family by myself, have for their audience the entire accumulation of gray cells belonging to both the cerebro-spinal and sympathetic brothers. Ours is a united family, and while each one plays his own part which is peculiar to himself, his struggles and his conquests, his sufferings and his enjoyments, in fact all the details of his life-history, are a matter of everyday and earnest consideration, and are talked over by all the members of our composite family at the family councils, and there is no time when a council cannot be called in the interest of any one of us.

But, good-by, dear friends. I have talked too long already, and although I have not begun to say what I wanted to, I must stop. If our interview has been a pleasant one, just call again and we will have it out some other time.

Now you have heard from each one of our composite family separately, and each one has done his best to give you a truthful conception of the part he has to play in our family of human forms; but there is but one way in which we can any of us do ourselves justice, obtain the least degree of satisfaction, or in fact are able even to exist at all, and that is by uniting all our shapes into one common form which shall stand for us all, which you may know as the composite man.

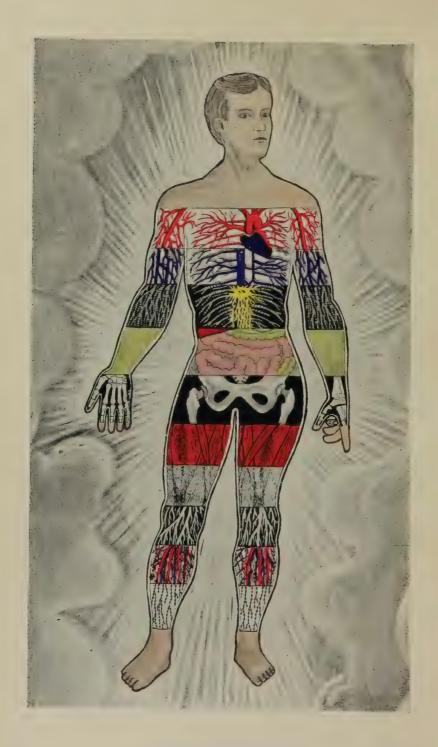
The composite man, then, is the man which is formed by the union of all of our shapes. He is not the bony man, nor the mus-

cular man, nor the arterial man, nor the nervous man, nor any other of our men, but all of them combined, and he cannot exist if any one of our family is absent. Imagine a human being attempting to go on without his bones, or without the skin man entering into his composition, or without the lymphatic man being present, or with the absence of any one of our family, and in thinking of how he could spare the different ones, please do not forget the two unsensed members of the family, the conscious and the subconscious forms! Without the presence of the life-principle he would be nothing but a corpse. Indeed, his existence could never have been accomplished; and as my conscious brother and myself are so widely different in our functions, one of us is just as essential as the other to the make-up of the composite man known as the human being.

And now I will leave the composite man to speak for himself. We have each spoken for ourselves and occasionally thrown in a word for each other, but the sum total of us all, the composite man, will next address you; and as you have had patience to listen to the impersonations of the individuals of our family of shapes, I feel quite confident that you will not withdraw your consideration from our family until the chorus of shapes as it comes from our composite whole shall say to you some few words that shall seem to him a fitting wind-up for our family entertainment.

Again thanking you for your kind and courteous attention, I retire from your audience in favor of him who was the first object of our coming together, and in whose interest we are all enlisted, and to whom we are each so essential that none of us could be spared without fastening ruin and destruction upon each and all of us. His name is the composite man, just an ordinary human being; any old specimen like you or me will serve to illustrate him. Truly the greatest study of mankind is man!





THE COMPOSITE MAN.

## IMPERSONATION No. 14.

## THE COMPOSITE MAN.

Mr. President, Ladies and Gentlemen:

Our entire family of human shapes has appeared before you one by one and left me for the final impersonation. Each has told his own separate story and now I must speak for us all, so here I am, last but not least. To call myself not least is by no means a conceited remark, nor will any of our human shapes take offense at it, simply because everybody knows that the whole is greater than its parts, and I am the whole thing. Those who have spoken to you on previous occasions similar to the present were simply parts. In me every one of the other shapes is present and in active operation. The family are all united, as it were, in one, and I am that one, a complete human being in active operation, ready for the business of life. I may be your grocer, or butcher, or lawyer, or doctor, or teacher, or best friend—anybody, indeed, you may fancy, for human beings are all cut out after a common pattern, and every human being that has ever trodden the earth was, like myself, a composite man, made up of the various human shapes, such as those who have already addressed you on previous occasions.

When none of our members is sick or out of order, I can tell you ours is a very happy family, indeed. When we are all well there is not a single member of the family that is in the least bit self-conscious. I do not know I have bones, or blood vessels, or skin, or nerves, or organs of any kind. I am not even conscious of my interior parts, and also the two spiritual shapes that are a part of myself do not intrude themselves upon my attention any more than do the physical shapes that are included in my make-up. All I know is that, taken as a whole, I want things and then try to get them, and this seems to constitute the business of my life. I have found out that what is good for us all is good for each one of us, and, on the contrary, what is good for each one of us is good for us all.

The mutual relationship between myself as a whole and the various human shapes which constitute my parts, is a wonderful study

and is represented over and over again in every form of organization. If there happens to be a member of an organization so unfortunate as to feel that his private interests seem of more consequence than the interests of his organization, so that he has no conception of what is known as universal good—that kind of a fellow, for instance, that would cheat a corporation or seek a public position for what he could get out of it, instead of what service he could render; in other words, so foolish as to be ruled by selfish instead of by more generous motives, a knowledge of the complete human being or composite man—which is to say myself—in his relationship to the shapes out of which he is constructed, would point a better way. You know we gain most of our knowledge by comparisons and parables. That is why our experiences need to be so various, so that we can see truth illustrated in a thousand different ways, ever the same truth, but just taught by different teachers, so that we can be sure to get a just conception of it through the perspective of our experiences. The man, for instance, who is constantly looking out for number one, seeking to get the advantage of his fellows on all possible occasions, can experiment with this principle of action in his family, in his business, in his travels and in his enjoyments, and if he is a very self-willed fellow and a slow student in the lessons of life, it may take a good many kinds of disappointments in the various relations in which he is placed with his fellowmen to bring him to a realizing sense that the scriptural injunction that one must lay down his life to find it, must give to get, is a law of spiritual physiology, which runs through every type of human activity. But I tell you our family has been so well brought up that each human shape recognizes that the only way to secure his own health and happiness is to devote his entire life to the service of the other members of the family, and each, I think, that has appeared before you, has, in a modest way, confessed his dependence upon all the others.

Of course, as I am the summing up of all the other shapes, if any one of them were left out I would not be myself at all, but an unfinished somebody that would scarcely be ready for business. On the other hand, every one of our members recognizes that there is not a single member of the entire family that could be spared and his own existence made possible. What one of the family do you think the bony man could spare, for instance? Could he get along without blood vessels? Could he get along without nerves? Could he get along without the connective tissue man? Could he get along without life?

No, he knows better than that, and fully realizes that into his shape enters every one of the other shapes. So, too, with the muscular man and with all of them; every shape enters into every other shape, and so closely are their various organs intertwined that only as they all move in unison can the meaning of life for any one of us be spelled out. You will at once understand, then, that when all the family are perfectly well and in working order our various parts are entirely devoid of all forms of self-consciousness, and that when any member of our family is sick, the whole family is sick clear through. You cannot have a disturbed bone without disturbing blood vessels, nerves and lymphatics, and thoughts and feelings and impulses. It is impossible to have a diseased muscle that does not visit a corresponding disaster on all the other members of the family that enter into its formation, which means us all.

In view of this fact, there is one very important reflection which I would like to impress upon you. Now, when I am not self-conscious in any of my parts I find I am in a perfectly natural state. My appetites are normal and tell me what I need for food and drink, and how much. They preside, also, over my work and my play, and guide me into the harmonious enjoyment of all life, both physical and spiritual. How easy it is for me to be good and kind and teachable and honest and truthful and virtuous in every way, and how simple a matter to perform the various duties of my every-day life as they are unfolded to me! But when, through some incident or accident, the harmonious action of any one of my organs is disturbed, the harmony of my whole being is interfered with, just as a single instrument in an orchestra, out of time or tune, is able to spoil the effect of any musical creation. When a single instrument of an orchestra is sick, the whole orchestra is disturbed, and in just the same way, when one of my organs has lost his connection with the rest of his fellows, he immediately becomes self-conscious and intrudes himself upon the entire family of organs. An unbalanced head can make the feet stumble and go the wrong wav and plunge the whole body into catastrophe; and feet, too, that are incapacitated for their proper service, can make the whole man lose his connection in life. It is of no use to occupy your time by multiplying illustrations of this universal principle, for I think you will immediately appreciate the tremendous scope of the application of my remark that when any part of me is sick, I am sick clear through. This principle runs through all forms of every possible type of pathology with which my organization is afflicted, be it inflammation in its various forms and stages, or neoplasms or atrophies or hypertrophies or any and every possible diseased condition. When one of our men suffers we all suffer, and we will never be happy and well again until we are well and happy severally and together. I do not believe this thought will be difficult for any one of you to comprehend, for you must immediately perceive that when one of us limps we all limp, when one of us wheezes we all wheeze, when one of us coughs we all cough, when one of us sneezes we all sneeze, when one of us inflames we all inflame, when one of us is discouraged despondency settles down like a wet blanket over our entire family, and when we are happy the sun shines for us all, and "God's in His heaven, All's right with the world."

In any infirmities I may happen to acquire which come under sense perception, my fellow-men seem to be quite troubled. They readily sympathize with all my afflictions and are ready to render any assistance in their power which my condition may seem to them to call for. If I am halt or blind or deaf or physically upset in any way, poisoned by microbes, mutilated by accident, or afflicted with any type of physical pathology that can be sensed, I am considered by my fellow-men as unfortunate and afflicted and deserving of all the help that can be extended to me; but that is as far as it goes. If I forget things that I am expected to remember, I am blamed. If I remember things that I ought to forget, I am not liked for it. If I think illogically, men call me names—and how inconsistent that is! If I am color-blind and cannot tell blue from green or red from yellow, it is attributed to defective eyesight, and I am charitably referred to a doctor with the earnest wish that I may be able to recover my sight in due time. But if my interior faculties are so disturbed that I cannot see the truth in the various situations in which I am placed, but mistake it for a lie, and vice versa; if my thinking is inaccurate and illogical and, worse than that, if my impulses are all turned topsy-turvy as well, and I am irritable where I ought to be amiable, full of spite and revenge where I ought to be forgiving, suspicious where I ought to be trustful, lustful where I ought to be virtuous, I am not considered a sick man, but simply a bad man. The world permits one to limp physically and calls it sickness. I am here to tell you that whenever I limp morally or intellectually, it is just the same thing. Do not forget, please, that when I am sick in any of my parts, I am sick clear through. Please remember, too, what the sympathetic man told you and what the subconscious man also affirmed in corroboration of his position, that it was natural for every man to be amiable and honorable and truthful and righteous and godlike and healthy and happy; and when the flow of life comes into a perfectly healthy physical organization, these perfect spiritual qualities, naturally enough, find perfect physical expression; but when the physical telephones are out of order, the music of the interior voices is sadly disturbed as they attempt to play upon this harp of time.

Please let me tell you right here in confidence, that the physically sick, who are everywhere receiving the world's sympathy and service in their behalf, are doing lots of improper thinking and feeling, for, as perhaps you remember my remarking before, when I am sick, I am sick clear through. That means my two spiritual members as well as all the physical shapes. But, bless your dear hearts, if you have not already done so, won't you please broaden your conception of the word metastasis until it comprehends the whole human being. and don't narrow it down to simply the physical part of me? Metastasis, you know, means a change of irritation, congestion or inflammation, one and usually all of them, involving, of course, disturbed function as well, from one part of the body to another. For instance, an injury to a nerve of the foot, instead of causing a sore foot, may be felt at the other end of the nerve fibers and produce lockjaw. An irritation of the skin, as from a burn, instead of inflaming the skin, can be transferred and, through this, the congestion and inflammation, to the various mucous membranes. Take an eczema, for instance: make use of an ointment which drives the disorder from the skin and it is liable to appear in the form of dyspepsia or intestinal catarrh or cough or kidney trouble or some other type of mucous membrane affection. Mumps may leave the salivary glands before the fury of the disease is spent and be visited upon the ovaries or testicles, according to the sex. Irritation of the nose or rectum may express itself in spasm of the bronchial tubes to such an extent as to take the shape of asthmatic breathing. The condition of pregnancy very frequently causes nausea and vomiting when the stomach is by no means at fault. You know, too, how a child rubs its nose whenever it has seat or pin worms. So illustrations might be multiplied to an unlimited extent. But there are other possibilities of metastasis of which you have no right to be ignorant. As irritations, followed by congestions and inflammations, can jump from one part of a nerve fiber to another, from the periphery to the center or from the center to the periphery, so they can be transferred from the physical part of my make-up to my interior organization and find expression in acute

or chronic disorders of my intellectual or emotional part, or both. Chronic tears may come from physical disturbance when there is no bodily consciousness of disorders; so can chronic anger, so can chronic lust, so can chronic treachery.

You must, my dear friends, broaden your conception of human disorders and their types of expression, for I am right here to tell you that it is no more natural to lie than it is to cough, to hate than it is to wheeze, to be spiritually or intellectually distorted than it is to limp physically. If you grasp the scope of my meaning, you will immediately comprehend that the world stands greatly in need of a race of doctors who in their diagnoses comprehend the entire human being and not simply the physical part. When there is a metastasis from an injured nerve fiber of a foot or hand to the nerve centers and the patient has lockjaw, we notice the foot or hand is not sore. The congestion and inflammation are in the nerve centers; so, too, when there has been a metastasis of irritation from the outside man to the inside man and he is full of wrong impulses, wrong thoughts and consequently of wrong actions, the physical disorders which turn the sweetness of his life to bitterness, make the truth as it comes into him into a lie, are not rendered conspicuous by self-consciousness. The irritation, congestion and inflammation have been transferred from the outside of things to the inside, and thus are the frailties and weaknesses of humanity which have been called by bad names nothing more nor less than cases of inverted disorders. They are metastases from the physical to the spiritual part of us, from the seen to the unseen, from the expression of forces back to the forces themselves. This makes sin and sickness synonymous terms; and as this great truth begins to dawn more and more upon those who are supposed to be diagnosticians of human pathology in all its forms, it will begin to be appreciated that the world needs more hospitals and fewer jails and penitentiaries, more comprehensive medical attention and fewer reform schools and insane asylums, and the era of a broader charity will be inaugurated that will be more in keeping with the progressive spirit of the wonderful time of inspiration in which it has been the privilege of us of the present day to run our earthly careers.

There is scarcely a type of mental or moral crookedness that has not been cured and restored to mental and moral balance by the correction, in skillful hands, of previously unsuspected physical imperfections, and all that is necessary to effect the emancipation of the race from a large part of its mental and emotional unhappiness, as well as its physical disorders, is to multiply these cures until they

shall become common instead of exceptional. Only let the world once realize that sin and sickness are synonymous terms and medical conventions will speedily broaden their scope of application. The knowledge which will cure the world is in the world to-day, and what is needed more than anything else is a universal friendliness of remedial agents. What will cure one is not adapted to another. Some cases would yield to the proper suggestion, some call for manual therapeutics to open obstructed channels of circulation, some require magnetic or electrical currents to stimulate parts that are dormant, large numbers require the art of the surgeon, while skillful prescribing of drugs is always more or less in demand.

Is it not high time that specialists in medicine recognize general medicine and general medicine recognize the necessity of the specialists? Let suggestive therapeutics, manual therapeutics and drug therapeutics cease their short-sighted rivalry and meet in common convention for the good of mankind. Then out of the mutual recognition and appreciation of the various means of healing that will result, will come the great help of which the world stands so sorely in need. The fact that mental and emotional deviations from correct standards are sicknesses refracted through imperfect physical conditions and are just as legitimately classified in the category of diseases as are the various types of physical pathology which are diagnosed by various means of sense perception, must first of all be universally recognized, and no examination of any sick man is complete until his entire being, both spiritual and physical, has been submitted to careful scrutiny by a medical expert sufficiently broad in his conception of disease to recognize the mutual dependency of mind and matter and that the fault with all of us who are sick does not lie with the great fountain of life from which we all draw our inspiration, but rather with some type of hindrance to its physical expression. Bodily consciousness on the part of the patient has too long been relied upon as trustworthy testimony in the study of cases.

If the impersonations to which you have listened ever become at all adequately appreciated by medical men, and the conditions of our sympathetic brother and his subconscious soul ever succeed in obtaining a recognition adequate to their importance, the world will surely reap the benefit of this advancement in medical knowledge, for humanity will not only be eased of its aches and pains and the self-conscious suffering, but will also be helped to the possibilities of honesty and truthfulness and all other essentials of right living. In no other way can the evolution of the race out of sickness into health,

out of emotional and intellectual crookedness and imperfections into right living, out of darkness into light, out of universal misery into universal happiness, be accomplished. Suggestion cannot do it all, manual therapeutics cannot do it all, the ordinary doctor's paraphernalia cannot do it all, but a union of all these forces can accomplish it.

What is first needed, then, is a mutual appreciation and friendliness among the various means of healing. What is needed second of all is a better appreciation of the part which our sympathetic brother plays in the physical economy. What is needed third of all is a knowledge of the fact that when we are sick, we are sick clear through, requiring that we shall appreciate, fourth of all, that our two spiritual brothers, the conscious and the subconscious shapes which belong to our family, have as much right to charitable consideration and medical attention as have the more readily understood physical impersonators to whom you have listened. Then will it be possible to so tune up these "harps of time" that all their music will be harmonious when their strings are skillfully played. Health and happiness will be as synonymous as are sin and sickness, and become universally enjoyed.

Are there any who are happy among you? Are there any who are perfectly well among you? Who has yet seen a perfect human being? Is not sickness in some type almost universal throughout the world, and have we not all suffered enough from ourselves and one another to be willing to drink deeper of the fountain of knowledge that we may be better fitted for our tasks of doctoring and nursing and judging and helping? We already have an extended knowledge of human anatomy and physiology. Are we not willing to lay down our prejudices and narrow-minded conceptions of things, and make use of this other higher knowledge for the universal betterment of our kind? Let us take an inventory of the world's entire stock of remedial measures. Let us give due weight to every well authenticated cure by whatever agent, be it suggestion or manual therapeutics or drug action or surgery or any other helpful force, and apply these various remedies as they are separately needed. Let us graduate from the schoolboyish practice of relying for our diagnoses upon the testimony of self-consciousness and contenting ourselves with eradicating the mere effects of human disorders, and take the ailments of mankind on a broad basis of anatomical and physiological knowledge. Have we not been sick long enough to stop our foolishness, born of jealousy and prejudice and narrow-minded conceptions of things? Then let us be wise and get well. We need not fear that any pet truth of ours will be ignored or snubbed. There is no truth that will not be wanted; there is no available knowledge that will not be needed; but the parts must serve the whole, and then the whole will take care of the parts.

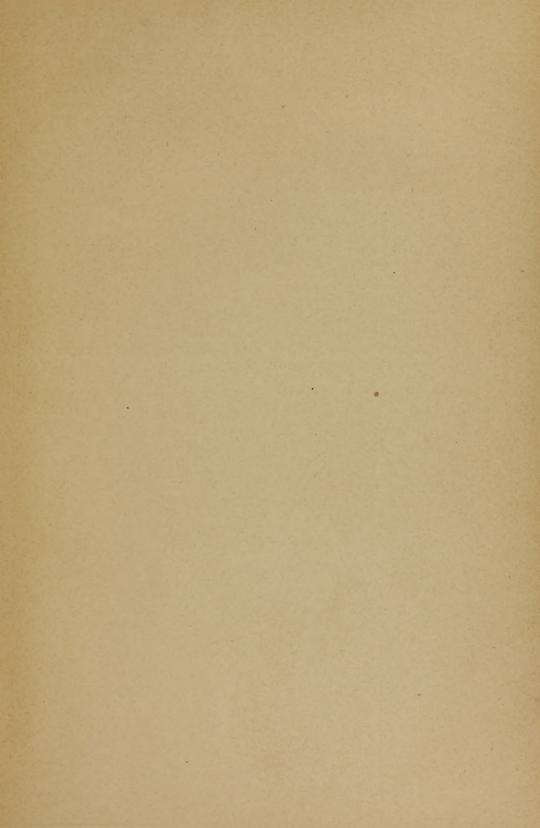
If I have done my duty as a composite man, I have amply illustrated the practicality of this great truth. The closing suggestion which I have to make to you is that while most of our family have been carefully studied and appreciated by students of medicine, our sympathetic brother, because of his uncomplaining nature and of his speaking in a language of function instead of the loud-mouthed declamation of the senses, has been overlooked and neglected, and I commend to your careful consideration the waste and repair of the sympathetic nerve as the key to the situation. When you begin to give the sympathetic man the attention which he should long since have received at your hands, you will begin to see disease with your minds instead of simply staring at it with your outward eyes. The appearances of things will no longer dazzle you, but your X-ray faculties will come to your assistance, and the sick will have a more substantial hope of complete recovery. Your cures will go beyond the mere self-consciousness of your cases to their substantial and more satisfactory building up, and when this is accomplished, sin will melt away with the sickness, and the eccentricities and unfortunate tendencies of mankind, which are so prolific of human misery, will fade away like darkness before the dawn.

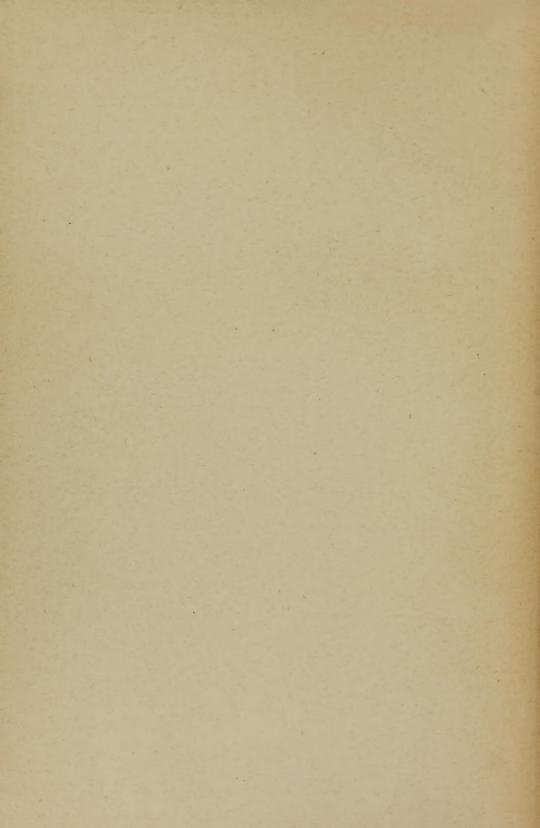
Perfect specimens of human beings are rare, and yet humanity sick as it has been, has accomplished much. It has pronounced great orations, written great essays, solved great problems, accomplished great inventions and wrought all the wonderful works of civilization of which we are so proud; but if humanity, sick with its physical disorders and mental and emotional crookedness, has accomplished so much, what may we not expect from these Sons of God when the evolution of their genius is once accomplished unembarrassed by disordered functions and hampered inspirations?

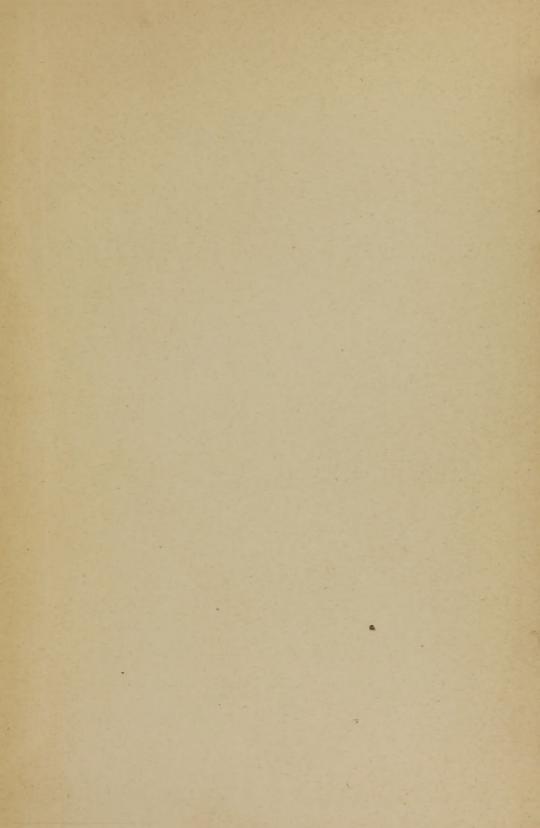
Ladies and gentlemen, the impersonations upon the parts of various members of our family, to which you have listened with such complimentary attention, are but mere outlines of the anatomical and physiological knowledge which they might have presented to you. What few pleasantries have been indulged in by our various speakers were merely intended to render more entertaining the mass of historical facts which otherwise, it was feared, would prove too

dull and dry to be interesting. But no fact has been distorted or perverted. It will be safe for you to rely upon every statement to which you have so patiently listened, and if these superficial impersonations prove at all interesting or helpful to you and you desire a more thoroughly elaborated life history of the various members of our family, I feel confident that our entire family will be at your service and furnish you with more completely elaborated life histories at some future time. We all appreciate the compliment of your close attention, I can assure you, and only hope that our audience has enjoyed the speakers as much as the speakers have enjoyed the audience. Any man who thoroughly comprehends the bearing of all our impersonations severally and collectively ought to be pretty well fortified for any position in life in which he is placed, for our little world but typifies the bigger world of which we are all but a part, and when you know us, you know yourselves, and to know one's self is to be wiser than most men.

Again thanking you for your kind audience, and in behalf of our family of human shapes and as the representative of them all, I most respectfully bid you good day.







QS 9 P913c 1901a

06330510R

005505100

NLM 05043288 8

NATIONAL LIBRARY OF MEDICINE